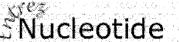
EXMBIT









Clear

All Databases

PubMed

Nucleotide

Protein Genome Structure

PMC

Taxonomy

Search Nucleotide

for

Go

Books

Limits

Preview/Index

History

Clipboard

Details

Format:

GenBank FASTA Graphics

More Formats ▼

Download ▼

Save ¥

Links ▼

NCBI Reference Sequence: AC_000008.1

Human adenovirus 5, complete genome

Comment <u>Features</u> Sequence

LOCUS DEC-2008 AC 000008

35938 bp DNA linear

VRL 08-

DEFINITION Human adenovirus 5, complete genome.

ACCESSION

AC 000008 AC_000008.1 GI:56160529

VERSION PROJECT

GenomeProject: 15107

DBLINK

Project:15107

DBLINK

Project: 15107

KEYWORDS SOURCE

Human adenovirus 5 ORGANISM

Human adenovirus 5

Viruses; dsDNA viruses, no RNA stage; Adenoviridae;

Mastadenovirus;

Human adenovirus C.

REFERENCE (bases 1 to 35938)

AUTHORS Davison, A.J., Benko, M. and Harrach, B.

TITLE JOURNAL Genetic content and evolution of adenoviruses J. Gen. Virol. 84 (Pt 11), 2895-2908 (2003)

14573794 PUBMED

REFERENCE

(bases 1 to 35938) AUTHORS Chroboczek, J., Bieber, F. and Jacrot, B.

TITLE The sequence of the genome of adenovirus type 5 and its

comparison

with the genome of adenovirus type 2

JOURNAL Virology 186 (1), 280-285 (1992)

PUBMED 1727603

REFERENCE (bases 1 to 35938) CONSRTM NCBI Genome Project

TITLE Direct Submission

JOURNAL Submitted (01-DEC-2004) National Center for Biotechnology

Information, NIH, Bethesda, MD 20894, USA

REFERENCE 4 (bases 1 to 35938)

AUTHORS Davison, A.J.

TITLE Direct Submission

Submitted (03-MAY-2002) MRC Virology Unit, Church Street, JOURNAL

Glasgow

G11 5JR, U.K.

COMMENT INFERRED REFSEQ: This record is predicted by genome sequence

analysis and is not yet supported by experimental evidence.

The

reference sequence was derived from BK000408.

On Oct 3, 2005 this sequence version replaced gi:33694637. This record represents an alternative annotation for M73260

M29978.

It is included in the NCBI RefSeq collection as an

alternative to

the reference sequence NC_001405.

COMPLETENESS: full length.

PRIMARY COMP

REFSEQ_SPAN

PRIMARY_IDENTIFIER PRIMARY_SPAN

1-35938

M73260.1

1-35935

FEATURES

Location/Qualifiers

Pick Primers

Customize View

Change Region Shown

Design and test primers for this sequence using Primer-BLAST.

Recent Activity

Turn Off Clear

The sequence of the genome of

gi|33694637|tpg|BK00

Human adenovirus 5. complete genome

Generation of recombinant

krasnykh[Auth] AND (("199... (วิคันษาเช

All links from this record

Full text in PMC

Protein

PubMed

Taxonomy

```
source
                     1..35938
                     /organism="Human adenovirus 5"
                     /mol type="genomic DNA"
                     /serotype="Human adenovirus type 5"
                     /db xref="taxon: 28285"
                     /note="Human adenovirus C"
                     1..103
     repeat_region
                     /note="ITR"
                     /rpt_type=inverted
     CDS
                     join(560..1112,1229..1545)
                     /note="other spliced forms exist with larger introns"
                     /codon_start=1
                     /product="E1A"
                     /protein_id="AP_000197.1"
                     /db_xref="GI:56160530"
                     /translation="MRHIICHGGVITEEMAASLLDQLIEEVLADNLPPPSHFE
א.זייקים
ELYDLDVTAPEDPNEEAVSQIFPDSVMLAVQEGIDLLTFPPAPGSPEPPHLSRQPEQP
EQRALGPVSMPNLVPEVIDLTCHEAGFPPSDDEDEEGEEFVLDYVEHPGHGCRSCHYH
RRNTGDPDIMCSLCYMRTCGMFVYSPVSEPEPEPEPEPEPARPTRRPKMAPAILRRPT
SPVSRECNSSTDSCDSGPSNTPPEIHPVVPLCPIKPVAVRVGGRRQAVECIEDLLNEP
                     GOPLDLSCKRPRP"
     CDS
                     1714..2244
                     /codon_start=1
                     /product="E1B 19K"
                     /protein_id="AP_000198.1"
                     /db_xref="GI:56160531"
                     /translation="MEAWECLEDFSAVRNLLEQSSNSTSWFWRFLWGSSQAKL
VCRTK
EDYKWEFEELLKSCGELFDSLNLGHQALFQEKVIKTLDFSTPGRAAAAVAFLSFIKDK
WSEETHLSGGYLLDFLAMHLWRAVVRHKNRLLLLSSVRPAIIPTEEQQQQQEEARRRR
                     QEQSPWNPRAGLDPRE"
     CDS
                     2019..3509
                     /codon_start=1
                     /product="E1B 55K"
                     /protein_id="AP_000199.1"
                     /db_xref="GI:56160532"
                     /translation="MERRNPSERGVPAGFSGHASVESGCETQESPATVVFRPP
GDNTD
GGAAAAAGGSQAAAAGAEPMEPESRPGPSGMNVVQVAELYPELRRILTITEDGQGLKG
VKRERGACEATEEARNLAFSLMTRHRPECITFQQIKDNCANELDLLAQKYSIEQLTTY
WLQPGDDFEEAIRVYAKVALRPDCKYKISKLVNIRNCCYISGNGAEVEIDTEDRVAFR
CSMINMWPGVLGMDGVVIMNVRFTGPNFSGTVFLANTNLILHGVSFYGFNNTCVEAWT
DVRVRGCAFYCCWKGVVCRPKSRASIKKCLFERCTLGILSEGNSRVRHNVASDCGCFM
LVKSVAVIKHNMVCGNCEDRASQMLTCSDGNCHLLKTIHVASHSRKAWPVFEHNILTR
CSLHLGNRRGVFLPYQCNLSHTKILLEPESMSKVNLNGVFDMTMKIWKVLRYDETRTR
                     CRPCECGGKHIRNQPVMLDVTEELRPDHLVLACTRAEFGSSDEDTD"
    CDS
                     3609..4031
                     /codon_start=1
                     /product="IX"
                     /protein_id="AP 000200.1"
                     /db_xref="GI:56160533"
                     /translation="MSTNSFDGSIVSSYLTTRMPPWAGVRQNVMGSSIDGRPV
LPANS
TTLTYETVSGTPLETAASAAASAAAATARGIVTDFAFLSPLASSAASRSSARDDKLTA
                     LLAQLDSLTRELNVVSQQLLDLRQQVSALKASSPPNAV"
     CDS
                     complement(join(4091..5427,5706..5718))
                     /codon_start=1
                     /product="IVa2"
                     /protein_id="AP_000201.1"
                     /db_xref="GI:56160534"
                     /translation="METRGRRPAALQHQQDQPQAHPGQRAARSAPLHRDPDYA
```

DEDPA

PVERHDPGPSGRAPTTAVQRKPPQPAKRGDMLDRDAVEQVTELWDRLELLGQTLKSMP TADGLKPLKNFASLQELLSLGGERLLADLVRENMRVRDMLNEVAPLLRDDGSCSSLNY QLHPVIGVIYGPTGGGKSQLLRNLLSSQLISPTPETVFFIAPQVDMIPPSBLKAWEMQ ICEGNYAPGPDGTIIPQSGTLRPRFVKMAYDDLILEHNYDVSDPRNIFAQAARGPIA IIMDECMENLGGHKGVSKFFHAFPSKLHDKFPKCTGYTVLVVLHNMNPRRDMAGNIAN LKIQSKMHLISPRMHPSQLNRFVNTYTKGLPLAISLLKDIFRHHAQRSCYDWIIYNT TPQHEALQWCYLHPRDGLMPMYLNIQSHLYHVLEKIHRTLNDRDRWSRAYRARKTPK" complement (join(5197..8784,14111..14119))

CDS

```
/codon_start=1
/product="pol"
/protein_id="AP_000202,1"
/db xref="GI:56160535"
```

translation="MALAQAHRARRLHAEAPDSGDQPPRRRVRQQPTRAAPAPARARR/ RRAPAPSPGGSGAPPTSGGSPASPLLDASSKDTPAAHRPPRGTVVAPRGCGLLQAIDA ATNOPLEIRYHLDLARALTRLCEVNLQELPPDLTPRELQTMDSSHLRDVVIKLRPPRA $\verb|DIWTLGSRGVVVRSTVTPLEQPDGQGQAAEVEDHQPNPPGEGLKFPLCFLVRGRQVNL|$ VQDVQPVHRCQYCARFYKSQHECSARRRDFYFHHINSHSSNWWREIQFFPIGSHPRTE RLFVTYDVETYTWMGAFGKOLVPFMLVMKFGGDEPLVTAARDLAANLGWDRWEODPLT $\verb|FYCITPEKMAIGRQFRTFRDHLQMLMARDLWSSFVASNPHLADWALSEHGLSSPEELT|\\$ $\tt YEELKKLPSIKGIPRFLELYIVGHNINGFDEIVLAAQVINNRSEVPGPFRITRNFMPR$ AGKILFNDVTFALPNPRSKKRTDFLLWEOGGCDDTDFKYOYLKVMVRDTFALTHTSLR KAAQAYALPVEKGCCAYQAVNQFYMLGSYRSEADGFPIQEYWKDREEFVLNRELWKKK ${\tt GQDKYDIIKETLDYCALDVQVTAELVNKLRDSYASFVRDAVGLTDASFNVFQRPTISS}$ NSHAIFROIVFRAEOPARSNLGPDLLAPSHELYDYVRASIRGGRCYPTYLGILREPLY VYDICGMYASALTHPMPWGPPLNPYERALAARAWQQALDLQGCKIDYFDARLLPGVFT $\verb|VDADPPDETQLDPLPPFCSRKGGRLCWTNERLRGEVATSVDLVTL| \verb|HNRGWRV| \verb|LVPDE| \\$ RTTVFPEWRCVAREYVQLNIAAKERADRDKNQTLRSIAKLLSNALYGSFATKLDNKKI VFSDQMDAATLKGITAGQVNIKSSSFLETDNLSAEVMPAFQREYSPQQLALADSDAEE ${\tt SEDERAPTPFYSPPSGTPGHVAYTYKPITFLDAEEGDMCLHTLERVDPLVDNDRYPSH}$ $\verb|LASFVLAWTRAFVSEWSEFLYEEDRGTPLEDRPLKSVYGDTDSLFVTERGHRLMETRG|$ KKRIKKHGGNLVFDPERPELTWLVECETVCGACGADAYSPESVFLAPKLYALKSLHCP SCGASSKGKLRAKGHAAEGLDYDTMVKCYLADAQGEDRQRFSTSRTSLKRTLASAQPG AHPFTVTQTTLTRTLRPWKDMTLARLDEHRLLPYSESRPNPRNEEICWIEMP"

CDS

```
complement(join(8583..10589,14111..14119))
/codon_start=1
/product="pTP"
/protein_id="AP_000203.1"
/db_xref="GI:56160536"
```

/translation="MALSVNDCARLTGQSVPTMEHFLPLRNIWNRVRDFPRASTTAAG
ITWMSRYIYGYHRLMLEDLAPGAPATLRWPLYRQPPPHFLVGYQYLVRTCNDYVFDSR
AYSRLRYTELSQPGHQTVNWSVMANCTYTINTGAYHRFVDMDDFQSTLTQVQQAILAE
RVVADLALLQPMRGFGVTRMGGRGRHLRPNSAAAAAIDARDAGQEEGEEEVPVERLMQ
DYYKDLRRCQNEAWGMADRLRIQQAGPKDMVLLSTIRRLKTAYFNYIISSTSARNNPD
RRPLPPATVLSLPCDCDWLDAFLERFSDPVDADSLRSLGGGVPTQQLLRCIVSAVSLP
HGSPPPTHNRDMTGGVFQLRPRENGRAVTETMRRRRGEMIERFVDRLPVRRRRRRVPP
PPPPPEEEGGALMEEEIEEEEEAPVAFERVDTVAELIRLLEEELTVSARNSQFFN
FAVDFYEAMERLEALGDINESTLRRWYMYFFVAEHTATTLNYLFQRLRNYAVFARHVE
LNLAQVVMRARDAEGGVVYSRVWNEGGLNAFSQLMARISNDLAATVERAGRGDLQEEE
IEQFMAEIAYQDNSGDVQEILRQAAVNDTEIDSVELSFRLKLTGPVVFTQRRQIQEIN
RRVVAFASNLRAQHQLLPARGADVPLPPLPAGPEPPLPPGARPRHRF"

<u>CDS</u>

```
11050..12297
/codon_start=1
/product="52K"
/protein_id="AP_000204.1"
/db_xref="GI:56160537"
```

/translation="MHPVLRQMRPPPQQRQEQEQRQTCRAPSPPPTASGGATSAVDAA ADGDYEPPRRARHYLDLEEGEGLARLGAPSPERYPRVQLKRDTREAYVPRQNLFRDR EGEEPEEMRDRKFHAGRELRHGLNRERLLREEDFEPDARTGISPARAHVAAADLVTAY EQTVNQEINFQKSFNNHVRTLVAREEVAIGLMHLWDFVSALEQNPNSKPLMAQLFLIV QHSRDNEAFRDALLNIVEPEGRWLLDLINILQSIVVQERSLSLADKVAAINYSMLSLG KFYARKIYHTPYVPIDKEVKIEGFYMRMALKVLTLSDDLGVYRNERIHKAVSVSRRRE LSDRELMHSLQRALAGTGSGDREAESYFDAGADLRWAPSRRALEAAGAGPGLAVAPAR AGNVGGVEEYDEDDEYBPEDGEY"

<u>CDS</u>

```
12318..14075
/codon_start=1
/product="pIIIa"
/protein_id="AP_000205,1"
/db_xref="GI:56160538"
```

/translation="MMQDATDPAVRAALQSQPSGLNSTDDWRQVMDRIMSLTARNPDA FRQQPQANRLSAILEAVVPARANPTHEKVLAIVNALAENRAIRPDEAGLVYDALLQRV ARYNSGNVQTNLDRLVGDVREAVAQRERAQQQGNLGSMVALNAFLSTQPANVPRGQED YTNFVSALRLMVTETPQSEVYQSGPDYFFQTSRQGLQTVNLSQAFKNLQGLWGVRAPT GDRATVSSLLTPNSRLLLLLIAPFTDSGSVSRDTYLGHLLTLYREAIGQAHVDEHTFQ EITSVSRALGQEDTGSLEATLNYLLTNRRQKIPSLHSLNSEEERILRYVQQSVSLNLM RDGVTPSVALDMTARNMEPGMYASNRPFINRLMDYLHRAAAVNPEYFTNAILNPHWLP

```
PPGFYTGGFEVPEGNDGFLWDDIDDSVFSPQPQTLLELQQREQAEAALRKESFRRPSS
                LSDLGAAAPRSDASSPFPSLIGSLTSTRTTRPRLLGEEEYLNNSLLOPOREKNLPPAF
                {\tt PNNGIESLVDKMSRWKTYAQEHRDVPGPRPPTRRQRHDRQRGLVWEDDDSADDSSVLD}
                LGGSGNPFAHLRPRLGRMF"
                14156..15871
CDS
                /codon_start=1
                /product="III"
                /protein id="AP 000206.1"
                /db xref="GI:56160539'
                translation="MRRAAMYEEGPPPSYESVVSAAPVAAALGSPFDAPLDPPFVPPR/
                YLRPTGGRNSIRYSELAPLFDTTRVYLVDNKSTDVASLNYQNDHSNFLTTVIQNNDYS
                PGEASTQTINLDDRSHWGGDLKTILHTNMPNVNEFMFTNKFKARVMVSRLPTKDNQVE
                LKYEWVEFTLPEGNYSETMTIDLMNNAIVEHYLKVGRQNGVLESDIGVKFDTRNFRLG
                FDPVTGLVMPGVYTNEAFHPDIILLPGCGVDFTHSRLSNLLGIRKRQPFQEGFRITYD
                DLEGGNI PALLDVDAYOASLKDDTEOGGGGAGGSNSSGSGAEENSNAAAAAMOPVEDM
                NDHAIRGDTFATRAEEKRAEAEAAAEAAAPAAQPEVEKPQKKPVIKPLTEDSKKRSYN
                LISNDSTFTQYRSWYLAYNYGDPQTGIRSWTLLCTPDVTCGSEQVYWSLPDMMQDPVT
                FRSTRQISNFPVVGAELLPVHSKSFYNDQAVYSQLIRQFTSLTHVFNRFPENQILARP
                {\tt PAPTITTVSENVPALTDHGTLPLRNSIGGVQRVTITDARRRTCPYVYKALGIVSPRVL}
                15878..16474
CDS
                /codon_start=1
                /product="pVII"
                /protein_id="AP 000207.1"
                /db_xref="GI:56160540"
                translation="MSILISPSNNTGWGLRFPSKMFGGAKKRSDQHPVRVRGHYRAPW/
                GAHKRGRTGRTTVDDAIDAVVEEARNYTPTPPPVSTVDAAIQTVVRGARRYAKMKRRR
                RRVARRHRRRPGTAAORAAAALLNRARRTGRRAAMRAARRLAAGIVTVPPRSRRRAAA
                AAAAAISAMTQGRRGNVYWVRDSVSGLRVPVRTRPPRN"
CDS
                16544..17650
                /codon_start=1
                /product="V"
                /protein id="AP 000208.1"
                /db_xref="GI:56160541"
                translation="MSKRKIKEEMLQVIAPEIYGPPKKEEQDYKPRKLKRVKKKKDD/
                DDELDDEVELLHATAPRRRVQWKGRRVKRVLRPGTTVVFTPGERSTRTYKRVYDEVYG
                DEDLLEQANERLGEFAYGKRHKDMLALPLDEGNPTPSLKPVTLOOVLPALAPSEEKRG
                LKRESGDLAPTVQLMVPKRQRLEDVLEKMTVEPGLEPEVRVRPIKQVAPGLGVQTVDV
                QIPTTSSTSIATATEGMETQTSPVASAVADAAVQAVAAAASKTSTEVQTDPWMFRVSA
                {\tt RRQPVLAPISVRRVAREGGRTLVLPTARYHPSIV"}
CDS
                17678..17920
                /codon start=1
                /product="pX"
                /protein_id="AP_000209.1"
                /db_xref="GI:56160542"
                /translation="MALTCRLRFPVPGFRGRMHRRRGMAGHGLTGGMRRAHHRRRRAS
                HRRMRGGILPLLIPLIAAAIGAVPGIASVALQAQRH"
CDS
                18003..18755
                /codon_start=1
                /product="pVI"
                /protein_id="AP_000210.1"
                /db xref="GI:56160543"
                translation="MEDINFASLAPRHGSRPFMGNWQDIGTSNMSGGAFSWGSLWSGI/
                KNFGSTVKNYGSKAWNSSTGQMLRDKLKEQNFQQKVVDGLASGISGVVDLANQAVQNK
                INSKLDPRPPVEEPPPAVETVSPEGRGEKRPRPDREETLVTOIDEPPSYEEALKOGLP
                \verb|TTRPIAPMATGVLGQHTPVTLDLPPPADTQQKPVLPGPTAVVVTRPSRASLRRAASGP|
                RSLRPVASGNWQSTLNSIVGLGVQSLKRRRCF"
CDS
                18842..21700
                /codon_start=1
                /product="hexon"
                /protein_id="AP_000211.1"
                /db xref="GI:56160544"
                /translation="MATPSMMPQWSYMHISGQDASEYLSPGLVQFARATETYFSLNNK
                FRNPTVAPTHDVTTDRSQRLTLRFIPVDREDTAYSYKARFTLAVGDNRVLDMASTYFD
                {\tt IRGVLDRGPTFKPYSGTAYNALAPKGAPNPCEWDEAATALEINLEEEDDDNEDEVDEQ}
                \verb"AEQQKTHVFGQAPYSGINITKEGIQIGVEGQTPKYADKTFQPEPQIGESQWYETEINH
                {\tt AAGRVLKKTTPMKPCYGSYAKPTNENGGQGILVKQQNGKLESQVEMQFFSTTEATAGN}
                GDNLTPKVVLYSEDVDIETPDTHISYMPTIKEGNSRELMGQQSMPNRPNYIAFRDNFI
                GLMYYNSTGNMGVLAGQASQLNAVVDLQDRNTELSYQLLLDSIGDRTRYFSMWNQAVD
                SYDPDVRIIENHGTEDELPNYCFPLGGVINTETLTKVKPKTGQENGWEKDATEFSDKN
                EIRVGNNFAMEINLNANLWRNFLYSNIALYLPDKLKYSPSNVKISDNPNTYDYMNKRV
                {\tt VAPGLVDCYINLGARWSLDYMDNVNPFNHHRNAGLRYRSMLLGNGRYVPFHIQVPQKF}
                {\tt FAIKNLLLLPGSYTYEWNFRKDVNMVLQSSLGNDLRVDGASIKFDSICLYATFFPMAH}
                NTASTLEAMLRNDTNDOSFNDYLSAANMLYPIPANATNVPISIPSRNWAAFRGWAFTR
                \verb|LKTKETPSLGSGYDPYYTYSGSIPYLDGTFYLNHTFKKVAITFDSSVSWPGNDRLLTP|\\
```

```
NEFEIKRSVDGEGYNVAQCNMTKDWFLVQMLANYNIGYQGFYIPESYKDRMYSFFRNF
                QPMSRQVVDDTKYKDYQQVGILHQHNNSGFVGYLAPTMREGQAYPANFPYPLIGKTAV
                DSITQKKFLCDRTLWRIPFSSNFMSMGALTDLGQNLLYANSAHALDMTFEVDPMDEPT
                LLYVLFEVFDVVRVHRPHRGVIETVYLRTPFSAGNATT"
CDS
                21733..22347
                /codon_start=1
                 /product="protease"
                /protein_id="AP_000212.1"
                /db xref="GI:56160545"
                 translation="MGSSEQELKAIVKDLGCGPYFLGTYDKRFPGFVSPHKLACAIVN/
                TAGRETGGVHWMAFAWNPHSKTCYLFEPFGFSDQRLKQVYQFEYESLLRRSAIASSPD
                RCITLEKSTQSVQGPNSAACGLFCCMFLHAFANWPQTPMDHNPTMNLITGVPNSMLNS
                PQVQPTLRRNQEQLYSFLERHSPYFRSHSAQIRSATSFCHLKNM"
CDS
                complement (22443..24032)
                /codon start=1
                /product="DBP"
                /protein_id="AP 000213.1"
                /db xref="GI:56160546'
                /translation="MASREEEQRETTPERGRGAARRPPTMEDVSSPSPSPPPPRAPPK
                KRMRRRIESEDEEDSSQDALVPRTPSPRPSTSAADLAIAPKKKKRPSPKPERPPSPE
                VIVDSEEEREDVALQMVGFSNPPVLIKHGKGGKRTVRRLNEDDPVARGMRTQEEEEEP
                SEAESEITVMNPLSVPIVSAWEKGMEAARALMDKYHVDNDLKANFKLLPDQVEALAAV
                CKTWLNEEHRGLQLTFTSNKTFVTMMGRFLQAYLQSFAEVTYKHHEPTGCALWLHRCA
                EIEGELKCLHGSIMINKEHVIEMDVTSENGQRALKEQSSKAKIVKNRWGRNVVQISNT
                {\tt DARCCVHDAACPANQFSGKSCGMFFSEGAKAQVAFKQIKAFMQALYPNAQTGHGHLLM}
                \verb"PLRCEC' CNSKPGHAPFLGRQLPKLTPFALSNAEDLDADLISDKSVLASV HHPALIVFQC"
                CNPVYRNSRAQGGGPNCDFKISAPDLLNALVMVRSLWSENFTELPRMVVPEFKWSTKH
                OYRNVSLPVAHSDARONPFDF"
CDS
                24061..26484
                /codon_start=1
                /product="100K"
                /protein_id="AP_000214.1"
                 /db xref="GI:56160547"
                /translation="MESVEKKDSLTAPSEFATTASTDAANAPTTFPVEAPPLEEEEVI
                IEQDPGFVSEDDEDRSVPTEDKKQDQDNAEANEEQVGRGDERHGDYLDVGDDVLLKHL
                QRQCAIICDALQERSDVPLAIADVSLAYERHLFSPRVPPKRQENGTCEPNPRLNFYPV
                FAVPEVLATYHIFFQNCKIPLSCRANRSRADKQLALRQGAVIPDIASLNEVPKIFEGL
                {\tt GRDEKRAANALQQENSENESHSGVLVELEGDNARLAVLKRSIEVTHFAYPALNLPPKV}
                {\tt MSTVMSELIVRRAQPLERDANLQEQTEEGLPAVGDEQLARWLQTREPADLEERRKLMM}
                AAVLVTVELECMQRFFADPEMQRKLEETLHYTFRQGYVRQACKISNVELCNLVSYLGI
                LHENRLGQNVLHSTLKGEARRDYVRDCVYLFLCYTWQTAMGVWQQCLEECNLKELQKL
                LKQNLKDLWTAFNERSVAAHLADIIFPERLLKTLQQGLPDFTSQSMLQNFRNFILERS
                {\tt GILPATCCALPSDFVPIKYRECPPPLWGHCYLLQLANYLAYHSDIMEDVSGDGLLECH}
                \tt CRCNLCTPHRSLVCNSQLLNESQIIGTFELQGPSPDEKSAAPGLKLTPGLWTSAYLRK
                FVPEDYHAHEIRFYEDQSRPPNAELTACVITQGHILGQLQAINKARQEFLLRKGRGVY
                \verb|LDPQSGEELNPIPPPPQPYQQQPRALASQDGTQKEAAAAAATHGRGGILGQSGRGGFG|
                \tt RGGGGHDGRLGEPRRGSFRGRRGVRRNTVTLGRIPLAGAPEIGNRFQHGYNLRSSGAA
                GTARSPTOP"
                join(26195..26510,26713..27086)
CDS
                /codon start=1
                /product="33K"
                /protein_id="AP_000215.1"
                /db xref="GI:56160548"
                /translation="MAPKKKLQLPPPPTDEEEYWDSQAEEVLDEEEEDMMEDWESLDE
                {\tt EASEVEEVSDETPSPSVAFPSPAPQKSATGSSMATTSAPQAPPALPVRRPNRRWDTTG}
                TRAAHTAPAAAAAAATAAATQKQRRPDSKTLTKPKKSTAAAAAGGGALRLAPNEPVST
                {\tt RELRNRIFPTLYAIFQQSRGQEQELKIKNRSLRSLTRSCLYHKSEDQLRRTLEDAEAL}
                FSKYCALTLKD"
CDS
                26195..26785
                /codon start=1
                /product="22K"
                /protein id="AP 000216.1"
                /db_xref="GI:56160549"
                /translation="MAPKKKLQLPPPPTDEEEYWDSQAEEVLDEEEEDMMEDWESLDE
                EASEVEEVSDETPSPSVAFPSPAPQKSATGSSMATTSAPQAPPALPVRRPNRRWDTTG
                TRAGKSKOPPPLAQEQQORQGYRSWRGHKNAIVACLODCGGNISFARRFLLYHHGVAF
                PRNILHYYRHLYSPYCTGGSGSGSNSSGHTEAKATG"
CDS
                27174..27857
                /codon start=1
                /product="pVIII"
                 /protein_id="<u>AP_000217.1</u>"
                /db xref="GI:56160550"
                /translation="MSKEIPTPYMWSYQPQMGLAAGAAQDYSTRINYMSAGPHMISRV
                NGIRAHRNRILLEQAAITTTPRNNLNPRSWPAALVYQESPAPTTVVLPRDAQAEVQMT
                \tt NSGAQLAGGFRHRVRSPGQGITHLTIRGRGIQLNDESVSSSLGLRPDGTFQIGGAGRP
                {\tt SFTPRQAILTLQTSSSEPRSGGIGTLQFIEEFVPSVYFNPFSGPPGHYPDQFIPNFDA}
```

```
VKDSADGYD"
CDS
                27858..28181
                /codon start=1
                /product="E3 12.5K"
                /protein_id="AP_000218.1"
                /db xref="GI:56160551"
                /translation="MLSGEAEQLRLKHLVHCRRHKCFARDSGEFCYFELPEDHIEGPA
                HGVRLTAQGELARSLIREFTQRPLLVERDRGPCVLTVICNCPNLGLHQDLCCHLCAEY
                NKYRN"
CDS
                28547..28738
                /codon_start=1
                /product="E3 CR1-alpha0"
                /protein_id="AP_000219.1
                /db_xref="GI:56160552"
                /translation="MNNSSNSTGYSNSGFSRIGVGVILCLVILFILILTLLCLRLAAC
                CVHICIYCQLFKRWGRHPR"
CDS
                28735..29217
                /codon start=1
                /product="E3 gp19K"
                /protein_id="AP_000220.1"
                /db_xref="GI:56160553"
                /translation="MIRYILLGLLTLASAHGTTOKVDFKEPACNVTFAAEANECTTLI
                KCTTEHEKLLIRHKNKIGKYAVYAIWQPGDTTEYNVTVFQGKSHKTFMYTFPFYEMCD
                ITMYMSKQYKLWPPQNCVENTGTFCCTAMLITVLALVCTLLYIKYKSRRSFIEEKKMP"
CDS
                29491..29772
                /note="Adenovirus death protein (ADP); E3 CR1-beta0"
                /codon_start=1
                /product="10.5 kD protein"
                /protein_id="AP_000221.2"
                /db xref="GI:146161101"
                /translation="MTNTTNAAAATGLTSTTNTPQVSAFVNNWDNLGMWWFSIALMFV
                CLIIMWLICCLKRKRARPPIYSPIIVLHPNNDGIHRLDGLKHMFFSLTV"
                29784..30059
CDS
                /codon start=1
                /product="E3 RID-alpha"
                /protein_id="AP_000222.1"
                /db xref="GI:56160555"
                /translation="MIPRVFILLTLVALFCACSTLAAVSHIEVDCIPAFTVYLLYGFV
                TLTLICSLITVVIAFIQCIDWVCVRFAYLRHHPQYRDRTIAELLRIL"
<u>CDS</u>
                30062..30460
                /codon_start=1
                /product="E3 RID-beta"
                /protein_id="AP_000223.1"
                /db xref="GI:56160556"
                /translation="MKFTVTFLLIICTLSAFCSPTSKPQRHISCRFTRIWNIPSCYNE
                KSDLSEAWLYAIISVMVFCSTILALAIYPYLDIGWKRIDAMNHPTFPAPAMLPLQQVV
                AGGFVPANQPRPTSPTPTEISYFNLTGGDD"
CDS
                30453..30839
                /codon_start=1
                /product="E3 14.7K"
                /protein_id="AP_000224.1"
                /db xref="GI:56160557"
                /translation="MTDTLDLEMDGIITEQRLLERRRAAAEQQRMNQELQDMVNLHQC
                KRGIFCLVKQAKVTYDSNTTGHRLSYKLPTKRQKLVVMVGEKPITITQHSVETEGCIH
                SPCQGPEDLCTLIKTLCGLKDLIPFN"
CDS
                complement (<30868..31031)
                /note="spliced to an unidentified coding region
                downstream"
                /codon start=1
                /product="U exon"
                /protein_id="AP_000225.1"
                /db xref="GI:56160558"
                /translation="MKIVGADGQEQEETDIPFRLWRKFAARRKLQYQSWEEGKEVLLN
                KLDRNLLTDF"
CDS
                31042..32787
                /codon start=1
                /product="fiber"
                /protein_id="AP_000226.1"
                /db xref="GI:56160559"
                /translation="MKRARPSEDTFNPVYPYDTETGPPTVPFLTPPFVSPNGFQESPP
                {\tt GVLSLRLSEPLVTSNGMLALKMGNGLSLDEAGNLTSQNVTTVSPPLKKTKSNINLEIS}
                APLTVTSEALTVAAAAPLMVAGNTLTMQSQAPLTVHDSKLSIATQGPLTVSEGKLALQ
                {\tt TSGPLTTTDSSTLTITASPPLTTATGSLGIDLKEPIYTQNGKLGLKYGAPLHVTDDLN}
                TLTVATGPGVTINNTSLQTKVTGALGFDSQGNMQLNVAGGLRIDSQNRRLILDVSYPF
                {\tt DAQNQLNLRLGQGPLFINSAHNLDINYNKGLYLFTASNNSKKLEVNLSTAKGLMFDAT}
                AIAINAGDGLEFGSPNAPNTNPLKTKIGHGLEFDSNKAMVPKLGTGLSFDSTGAITVG
```

```
NKNNDKLTLWTTPAPSPNCRLNAEKDAKLTLVLTKCGSQILATVSVLAVKGSLAPISG
                 TVQSAHLIIRFDENGVLLNNSFLDPEYWNFRNGDLTEGTAYTNAVGFMPNLSAYPKSH
                 {\tt GKTAKSNIVSQVYLNGDKTKPVTLTITLNGTQETGDTTPSAYSMSFSWDWSGHNYINE}
                 IFATSSYTFSYIAQE"
CDS
                 complement(join(32914..33192,33904..34077))
                 /codon start=1
                 /product="E4 ORF6/7"
                 /protein_id="AP_000227.1"
                 /db xref="GI:56160560"
                 translation="MTTSGVPFGMTLRPTRSRLSRRTPYSRDRLPPFETETRATILED/
                 HPLLPECNTLTMHNAWTSPSPPVKQPQVGQQPVAQQLDSDMNLSELPGEFINITDERL
                ARQETVWNITPKNMSVTHDMMLFKASRGERTVYSVCWEGGGRLNTRVL"
CDS
                 complement (33193..34077)
                 /codon_start=1
                 /product="E4 34K"
                 /protein_id="AP_000228.1"
                 /db_xref="GI:56160561"
                 /translation="MTTSGVPFGMTLRPTRSRLSRRTPYSRDRLPPFETETRATILED
                {\tt HPLLPECNTLTMHNVSYVRGLPCSVGFTLIQEWVVPWDMVLTREELVILRKCMHVCLC}
                 CANIDIMTSMMIHGYESWALHCHCSSPGSLQCIAGGQVLASWFRMVVDGAMFNQRFIW
                 YREVVNYNMPKEVMFMSSVFMRGRHLIYLRLWYDGHVGSVVPAMSFGYSALHCGILNN
                 {\tt IVVLCCSYCADLSEIRVRCCARRTRRLMLRAVRIIAEETTAMLYSCRTERRRQQFIRA}
                LLQHHRPILMHDYDSTPM"
CDS
                 complement (33998..34342)
                 /codon start=1
                 /product="E4 ORF4"
                 /protein_id="AP 000229.1"
                 /db xref="GI:56160562"
                 /translation="MVLPALPAPPVCDSQNECVGWLGVAYSAVVDVIRAAAHEGVYIE
                 PEARGRLDALREWIYYNYYTERSKRRDRRRRSVCHARTWFCFRKYDYVRRSIWHDTTT
                NTISVVSAHSVQ"
CDS
                 complement (34353..34703)
                 /codon_start=1
                 /product="E4 ORF3"
                 /protein_id="AP 000230.1"
                 /db_xref="GI:56160563"
                 /translation="MIRCLRLKVEGALEQIFTMAGLNIRDLLRDILRRWRDENYLGMV
                {\tt EGAGMFIEEIHPEGFSLYVHLDVRAVCLLEAIVQHLTNAIICSLAVEFDHATGGERVH}
                LIDLHFEVLDNLLE"
CDS
                complement (34700..35092)
                 /codon start=1
                 /product="E4 ORFB"
                /protein_id="AP_000231.1"
                 /db xref="GI:56160564"
                 translation="MFERKMVSFSVVVPELTCLYLHEHDYDVLSFLREALPDFLSSTL/
                {\tt HFISPPMQQAYIGATLVSIAPSMRVIISVGSFVMVPGGEVAALVRADLHDYVQLALRR}
                DLRDRGIFVNVPLLNLIQVCEEPEFLQS"
variation
                34860
                 /experiment="experimental evidence, no additional details
                recorded"
                /note="compared to sequence presented in GenBank Accession
                Number M73260"
                 /citation=[1]
                 /replace="t"
                34935 34936
variation
                 /experiment="experimental evidence, no additional details
                recorded"
                 /note="compared to sequence presented in GenBank Accession
                Number M73260'
                /citation=[1]
                 /replace="t"
CDS
                complement (35140..35526)
                /codon start=1
                 /product="E4 ORF1"
                 /protein_id="AP_000232.1"
                /db xref="GI:56160565"
                 /translation="MAAAVEALYVVLEREGAILPROEGFSGVYVFFSPINFVIPPMGA
                VMLSLRLRVCIPPGYFGRFLALTDVNQPDVFTESYIMTPDMTEELSVVLFNHGDQFFY
                GHAGMAVVRLMLIRVVFPVVRQASNV"
                35320..35321
variation
                 /experiment="experimental evidence, no additional details
                recorded"
                /citation=[1]
                /replace="
                35512
variation
                /citation=[1]
```

/replace=""

```
35525
    variation
                     /citation=[1]
                     /replace=""
                   35836..35938
    repeat region
                     /note="ITR"
                    /rpt_type=inverted
ORIGIN
       1 catcatcaat aatatacctt attttggatt gaagccaata tgataatgag ggggtggagt
      61 ttgtgacgtg gcgcggggcg tgggaacggg gcgggtgacg tagtagtgtg gcggaagtgt
      121 gatgttgcaa gtgtggcgga acacatgtaa gcgacggatg tggcaaaagt gacgtttttg
      181 gtgtgcgccg gtgtacacag gaagtgacaa ttttcgcgcg gttttaggcg gatgttgtag
      241 taaatttggg cgtaaccgag taagatttgg ccattttcgc gggaaaactg aataagagga
      301 agtgaaatct gaataatttt gtgttactca tagcgcgtaa tatttgtcta gggccgcggg
      361 gactttgacc gtttacgtgg agactcgccc aggtgttttt ctcaggtgtt ttccgcgttc
     421 cgggtcaaag ttggcgtttt attattatag tcagctgacg tgtagtgtat ttatacccgg
     481 tgagttcctc aagaggccac tcttgagtgc cagcgagtag agttttctcc tccgagccgc
      541 teegacaceg ggaetgaaaa tgagacatat tatetgeeae ggaggtgtta ttacegaaga
      601 aatggccgcc agtcttttgg accagctgat cgaagaggta ctggctgata atcttccacc
      661 toctagocat titigaaccac ctaccettca egaactgtat gatttagacg tgaeggeece
      721 cgaagateee aacgaggagg eggtttegea gattttteee gaetetgtaa tgttggeggt
     781 gcaggaaggg attgacttac tcacttttcc gccggcgccc ggttctccgg agccgcctca
     841 cctttcccgg cagcccgagc agccggagca gagagccttg ggtccggttt ctatgccaaa
     901 ccttgtaccg gaggtgatcg atcttacctg ccacgaggct ggctttccac ccagtgacga
     961 cgaggatgaa gagggtgagg agtttgtgtt agattatgtg gagcaccccg ggcacggttg
    1021 caggtettgt cattateace ggaggaatae gggggaecea gatattatgt gttegetttg
    1081 ctatatgagg acctgtggca tgtttgtcta cagtaagtga aaattatggg cagtgggtga
    1141 tagagtggtg ggtttggtgt ggtaattttt tttttaattt ttacagtttt gtggtttaaa
    1201 gaattttgta ttgtgatttt tttaaaaggt cetgtgtctg aacetgagee tgagecegag
    1261 ccagaaccgg agcctgcaag acctacccgc cgtcctaaaa tggcgcctgc tatcctgaga
    1321 cgcccgacat cacctgtgtc tagagaatgc aatagtagta cggatagctg tgactccggt
    1381 ccttctaaca cacctcctga gatacacccg gtggtcccgc tgtgccccat taaaccagtt
    1441 geogtgagag ttggtgggeg tegecagget gtggaatgta tegaggaett gettaaegag
    1501 cctgggcaac ctttggactt gagctgtaaa cgccccaggc cataaggtgt aaacctgtga
    1561 ttgcgtgtgt ggttaacgcc tttgtttgct gaatgagttg atgtaagttt aataaagggt
    1621 gagataatgt ttaacttgca tggcgtgtta aatggggcgg ggcttaaagg gtatataatg
    1681 cgccgtgggc taatcttggt tacatctgac ctcatggagg cttgggagtg tttggaagat
    1741 ttttctgctg tgcgtaactt gctggaacag agctctaaca gtacctcttg gttttggagg
    1801 tttctgtggg gctcatccca ggcaaagtta gtctgcagaa ttaaggagga ttacaagtgg
    1861 gaatttgaag agcttttgaa atcctgtggt gagctgtttg attctttgaa tctgggtcac
    1921 caggegettt tecaagagaa ggteateaag aetttggatt tttecaeace ggggegeget
    1981 geggetgetg ttgetttttt gagttttata aaggataaat ggagegaaga aacceatetg
    2041 agegggggt acetgetgga ttttetggee atgeatetgt ggagageggt tgtgagaeae
    2101 aagaatcgcc tgctactgtt gtcttccgtc cgcccggcga taataccgac ggaggagcag
    2161 cagcagcagc aggaggaagc caggcggcgg cggcaggagc agagcccatg gaacccgaga
    2221 gccggcctgg accctcggga atgaatgttg tacaggtggc tgaactgtat ccagaactga
    2281 qacqcatttt qacaattaca gaggatgggc aggggctaaa gggggtaaag agggagcggg
    2341 gggcttgtga ggctacagag gaggctagga atctagcttt tagcttaatg accagacacc
    2401 gtcctgagtg tattactttt caacagatca aggataattg cgctaatgag cttgatctgc
    2461 tqqcqcaqaa qtattccata qaqcaqctqa ccacttactq qctqcaqcca qqqqatqatt
    2521 ttgaggaggc tattagggta tatgcaaagg tggcacttag gccagattgc aagtacaaga
    2581 tcagcaaact tgtaaatatc aggaattgtt gctacatttc tgggaacggg gccgaggtgg
    2641 agatagatac ggaggatagg gtggccttta gatgtagcat gataaatatg tggccggggg
    2701 tgcttggcat ggacggggtg gttattatga atgtaaggtt tactggcccc aattttagcg
    2761 gtacggtttt cctggccaat accaacctta tcctacacgg tgtaagcttc tatgggttta
    2821 acaatacctg tgtggaagcc tggaccgatg taagggttcg gggctgtgcc ttttactgct
    2881 gctggaaggg ggtggtgtt cgccccaaaa gcagggcttc aattaagaaa tgcctctttg
    2941 aaaggtgtac cttgggtatc ctgtctgagg gtaactccag ggtgcgccac aatgtggcct
    3001 ccgactgtgg ttgcttcatg ctagtgaaaa gcgtggctgt gattaagcat aacatggtat
    3061 gtggcaactg cgaggacagg gcctctcaga tgctgacctg ctcggacggc aactgtcacc
    3121 tgctgaagac cattcacgta gccagccact ctcgcaaggc ctggccagtg tttgagcata
    3181 acatactgac cogctgttcc ttgcatttgg gtaacaggag gggggtgttc ctaccttacc
    3241 aatgcaattt gagtcacact aagatattgc ttgagcccga gagcatgtcc aaggtgaacc
    3301 tgaacggggt gtttgacatg accatgaaga tctggaaggt gctgaggtac gatgagaccc
    3361 gcaccaggtg cagaccctgc gagtgtggcg gtaaacatat taggaaccag cctgtgatgc
    3421 tggatgtgac cgaggagetg aggecegate acttggtget ggeetgeace egegetgagt
    3481 ttggctctag cgatgaagat acagattgag gtactgaaat gtgtgggcgt ggcttaaggg
    3541 tgggaaagaa tatataaggt gggggtctta tgtagttttg tatctgtttt gcagcagccg
    3601 ccqccqccat qaqcaccaac tcqtttqatq qaaqcattqt qaqctcatat ttqacaacqc
    3661 geatgeecee atgggeeggg gtgegteaga atgtgatggg etceageatt gatggtegee
    3721 ccgtcctgcc cgcaaactct actaccttga cctacgagac cgtgtctgga acgccgttgg
    3781 agactgcagc ctccgccgcc gcttcagccg ctgcagccac cgcccgcggg attgtgactg
    3841 actttgcttt cctgagcccg cttgcaagca gtgcagcttc ccgttcatcc gcccgcgatg
    3901 acaagttgac ggctcttttg gcacaattgg attctttgac ccgggaactt aatgtcgttt
    3961 ctcagcagct gttggatctg cgccagcagg tttctgccct gaaggcttcc tcccctccca
    4021 atgeggttta aaacataaat aaaaaaccag actctgtttg gatttggatc aagcaagtgt
```

```
4081 cttgctgtct ttatttaggg gttttgcgcg cgcggtaggc ccgggaccag cggtctcggt
4141 cgttgagggt cctgtgtatt ttttccagga cgtggtaaag gtgactctgg atgttcagat
4201 acatgggcat aagcccgtct ctggggtgga ggtagcacca ctgcagagct tcatgctgcg
4261 gggtggtgtt gtagatgate cagtegtage aggagegetg ggegtggtge etaaaaatgt
4321 ctttcagtag caagctgatt gccaggggca ggcccttggt gtaagtgttt acaaagcggt
4381 taagctggga tgggtgcata cgtggggata tgagatgcat cttggactgt atttttaggt
4441 tggctatgtt cccagccata tccctccggg gattcatgtt gtgcagaacc accagcacag
4501 tgtatccggt gcacttggga aatttgtcat gtagcttaga aggaaatgcg tggaagaact
4561 tggagacgcc cttgtgacct ccaagatttt ccatgcattc gtccataatg atggcaatgg
4621 gcccacgggc ggcggcctgg gcgaagatat ttctgggatc actaacgtca tagttgtgtt
4681 ccaggatgag atcgtcatag gccattttta caaagcgcgg gcggagggtg ccagactgcg
4741 gtataatggt tccatccggc ccaggggcgt agttaccctc acagatttgc atttcccacg
4801 ctttgagttc agatgggggg atcatgtcta cctgcggggc gatgaagaaa acggtttccg
4861 gggtagggga gatcagctgg gaagaaagca ggttcctgag cagctgcgac ttaccgcagc
4921 cggtgggccc gtaaatcaca cctattaccg ggtgcaactg gtagttaaga gagctgcagc
4981 tgccgtcatc cctgagcagg ggggccactt cgttaagcat gtccctgact cgcatgtttt
5041 ccctgaccaa atccgccaga aggcgctcgc cgcccagcga tagcagttct tgcaaggaag
5101 caaagttttt caacggtttg agaccgtccg ccgtaggcat gcttttgagc gtttgaccaa
5161 gcagttccag gcggtcccac agctcggtca cctgctctac ggcatctcga tccagcatat
5221 ctcctcgttt cgcgggttgg ggcggctttc gctgtacggc agtagtcggt gctcgtccag
5281 acgggccagg gtcatgtctt tccacgggcg cagggtcctc gtcagcgtag tctgggtcac
5341 ggtgaagggg tgcgctccgg gctgcgcgct ggccagggtg cgcttgaggc tggtcctgct
5401 ggtgctgaag cgctgccggt cttcgccctg cgcgtcggcc aggtagcatt tgaccatggt
5461 gtcatagtcc agcccctccg cggcgtggcc cttggcgcgc agcttgccct tggaggaggc
5521 gccgcacgag gggcagtgca gacttttgag ggcgtagagc ttgggcgcga gaaataccga
5581 ttccggggag taggcatccg cgccgcaggc cccgcagacg gtctcgcatt ccacgagcca
5641 ggtgagctct ggccgttcgg ggtcaaaaac caggtttccc ccatgctttt tgatgcgttt
5701 cttacctctg gtttccatga gccggtgtcc acgctcggtg acgaaaaggc tgtccgtgtc
5761 cccgtataca gacttgagag gcctgtcctc gagcggtgtt ccgcggtcct cctcgtatag
5821 aaactcggac cactctgaga caaaggctcg cgtccaggcc agcacgaagg aggctaagtg
5881 ggaggggtag cggtcgttgt ccactagggg gtccactcgc tccagggtgt gaagacacat
5941 gtcgccctct tcggcatcaa ggaaggtgat tggtttgtag gtgtaggcca cgtgaccggg
6001 tgttcctgaa ggggggctat aaaagggggt gggggcgcgt tcgtcctcac tctcttccgc
6061 atcgctgtct gcgagggcca gctgttgggg tgagtactcc ctctgaaaag cgggcatgac
6121 ttctgcgcta agattgtcag tttccaaaaa cgaggaggat ttgatattca cctggcccgc
6181 ggtgatgcct ttgagggtgg ccgcatccat ctggtcagaa aagacaatct ttttgttgtc
6241 aagcttggtg gcaaacgacc cgtagaggc gttggacagc aacttggcga tggagcgcag
6301 ggtttggttt ttgtcgcgat cggcgcgctc cttggccgcg atgtttagct gcacgtattc
6361 gcgcgcaacg caccgccatt cgggaaagac ggtggtgcgc tcgtcgggca ccaggtgcac
6421 gcgccaaccg cggttgtgca gggtgacaag gtcaacgctg gtggctacct ctccgcgtag
6481 gcgctcgttg gtccagcaga ggcggccgcc cttgcgcgag cagaatggcg gtagggggtc
6541 tagctgcgtc tcgtccgggg ggtctgcgtc cacggtaaag accccgggca gcaggcgcgc
6601 gtcgaagtag tctatcttgc atccttgcaa gtctagcgcc tgctgccatg cgcgggcggc
6661 aagcgcgcgc tcgtatgggt tgagtggggg accccatggc atggggtggg tgagcgcgga
6721 ggcgtacatg ccgcaaatgt cgtaaacgta gaggggctct ctgagtattc caagatatgt
6781 agggtagcat cttccaccgc ggatgctggc gcgcacgtaa tcgtatagtt cgtgcgaggg
6841 agcgaggagg tcgggaccga ggttgctacg ggcgggctgc tctgctcgga agactatctg
6901 cctgaagatg gcatgtgagt tggatgatat ggttggacgc tggaagacgt tgaagctggc
6961 gtctgtgaga cctaccgcgt cacgcacgaa ggaggcgtag gagtcgcgca gcttgttgac
7021 cageteggeg gtgacetgca egtetaggge geagtagtee agggttteet tgatgatgte
7081 atacttatcc tgtccctttt ttttccacag ctcgcggttg aggacaaact cttcgcggtc
7141 tttccagtac tcttggatcg gaaacccgtc ggcctccgaa cggtaagagc ctagcatgta
7201 gaactggttg acggcctggt aggcgcagca tcccttttct acgggtagcg cgtatqcctq
7261 cgcggccttc cggagcgagg tgtggggtgag cgcaaaggtg tccctgacca tgactttgag
7321 gtactggtat ttgaagtcag tgtcgtcgca tccgccctgc tcccagagca aaaagtccgt
7381 gcgctttttg gaacgcggat ttggcagggc gaaggtgaca tcgttgaaga gtatctttcc
7441 cgcgcgaggc ataaagttgc gtgtgatgcg gaagggtccc ggcacctcgg aacggttgtt
7501 aattacctgg gcggcgagca cgatctcgtc aaagccgttg atgttgtggc ccacaatgta
7561 aagttccaag aagcgcggga tgcccttgat ggaaggcaat tttttaagtt cctcgtaggt
7621 gagetettea ggggagetga geeegtgete tgaaagggee eagtetgeaa gatgagggtt
7681 ggaagegacg aatgagetee acaggteacg ggccattage atttgcaggt ggtegegaaa
7741 ggtcctaaac tggcgaccta tggccatttt ttctggggtg atgcagtaga aggtaagcgg
7801 gtcttgttcc cagcggtccc atccaaggtt cgcggctagg tctcgcgcgg cagtcactag
7861 aggeteatet cegeegaact teatgaceag catgaaggge aegagetget teceaaagge
7921 ccccatccaa gtataggtct ctacatcgta ggtgacaaag agacgctcgg tgcgaggatg
7981 cgagccgatc gggaagaact ggatctcccg ccaccaattg gaggagtggc tattgatgtg
8041 gtgaaagtag aagtccctgc gacgggccga acactcgtgc tggcttttgt aaaaacgtgc
8101 gcagtactgg cagcggtgca cgggctgtac atcctgcacg aggttgacct gacgaccgcg
8161 cacaaggaag cagagtggga atttgagccc ctcgcctggc gggttttggct ggtggtcttc
8221 tacttcggct gcttgtcctt gaccgtctgg ctgctcgagg ggagttacgg tggatcggac
8281 caccacgccg cgcgagccca aagtccagat gtccgcgcgc ggcggtcgga gcttgatgac
8341 aacatcgcgc agatgggagc tgtccatggt ctggagctcc cgcggcgtca ggtcaggcgg
8401 gageteetge aggtttacet egeatagaeg ggteagggeg egggetagat eeaggtgata
8461 cctaatttcc aggggctggt tggtggcggc gtcgatggct tgcaagaggc cgcatccccg
8521 cggcgcgact acggtaccgc gcggcgggcg gtgggccgcg ggggtgtcct tggatgatgc
8581 atctaaaagc ggtgacgegg gcgagcccc ggaggtaggg ggggctccgg accegccggg
```

```
8641 agagggggca ggggcacgtc ggcgccgcgc gcgggcagga gctggtgctg cgcgcgtagg
 8701 ttgctggcga acgcgacgac gcggcggttg atctcctgaa tctggcgcct ctgcgtgaag
 8761 acgacgggcc cggtgagctt gagcctgaaa gagagttcga cagaatcaat ttcggtgtcg
 8821 ttgacggcgg cctggcgcaa aatctcctgc acgtctcctg agttgtcttg ataggcgatc
 8881 teggecatga actgetegat etetteetee tggagatete egegteegge tegeteeaeg
 8941 gtggeggega ggtegttgga aatgegggee atgagetgeg agaaggegtt gaggeeteee
 9001 tegttecaga egeggetgta gaccaegece cetteggeat egegggegeg eatgaceace
 9061 tgcgcgagat tgagctccac gtgccgggcg aagacggcgt agtttcgcag gcgctgaaag
 9121 aggtagttga gggtggtggc ggtgtgttct gccacgaaga agtacataac ccagcgtcgc
 9181 aacgtggatt cgttgatatc ccccaaggcc tcaaggcgct ccatggcctc gtagaagtcc
 9241 acggcgaagt tgaaaaactg ggagttgcgc gccgacacgg ttaactcctc ctccagaaga
 9301 eggatgaget eggegacagt gtegegeace tegegeteaa aggetaeagg ggeetettet
 9361 tettetteaa teteetette eataagggee teeeettett ettettetgg eggeggtggg
 9421 ggaggggga cacggcggcg acgacggcgc accgggaggc ggtcgacaaa gcgctcgatc
 9481 atctccccgc ggcgacggcg catggtctcg gtgacggcgc ggccgttctc gcgggggcgc
 9541 agttggaaga egeegeeegt catgteeegg ttatgggttg gegggggget geeatgegge
 9601 agggatacgg cgctaacgat gcatctcaac aattgttgtg taggtactcc gccgccgagg
 9661 gacctgagcg agtccgcatc gaccggatcg gaaaacctct cgagaaaggc gtctaaccag
 9721 tcacagtcgc aaggtaggct gagcaccgtg gcgggcggca gcgggcggcg gtcggggttg
 9781 tttctggcgg aggtgctgct gatgatgtaa ttaaagtagg cggtcttgag acggcggatg
 9841 gtcgacagaa gcaccatgtc cttgggtccg gcctgctgaa tgcgcaggcg gtcggccatg
 9901 ccccaggett cgttttgaca tcggcgcagg tctttgtagt agtcttgcat gagcetttct
 9961 accggcactt cttcttctcc ttcctcttgt cctgcatctc ttgcatctat cqctqcqqcq
10021 gcggcggagt ttggccgtag gtggcgccct cttcctccca tgcgtgtgac cccgaagccc
10081 ctcatcggct gaagcagggc taggtcggcg acaacgcgct cggctaatat ggcctgctgc
10141 acctgcgtga gggtagactg gaagtcatcc atgtccacaa agcggtggta tgcgcccqtg
10201 ttgatggtgt aagtgcagtt ggccataacg gaccagttaa cggtctggtg acccggctgc
10261 gagagetegg tgtacetgag aegegagtaa geeetegagt caaataegta gtegttgeaa
10321 gtccgcacca ggtactggta tcccaccaaa aagtgcggcg gcggctggcg gtagaggggc
10381 cagcgtaggg tggccggggc tccgggggcg agatcttcca acataaggcg atgatatccg
10441 tagatgtacc tggacatcca ggtgatgccg gcggcggtgg tggaggcgcg cggaaagtcg
10501 cggacgcggt tccagatgtt gcgcagcggc aaaaagtgct ccatggtcgg gacgctctgg
10561 ccggtcaggc gcgcgcaatc gttgacgctc tagaccgtgc aaaaggagag cctgtaagcg
10621 ggcactcttc cgtggtctgg tggataaatt cgcaagggta tcatggcgga cgaccggggt
10681 tegageeeeg tateeggeeg teegeegtga tecatgeggt tacegeeege gtgtegaace
10741 caggtgtgcg acgtcagaca acgggggagt gctccttttg gcttccttcc aggcgcggcg
10801 getgetgege tagetttttt ggecactgge egegegeage gtaageggtt aggetggaaa
10861 gcgaaagcat taagtggctc gctccctgta gccggagggt tattttccaa gggttgagtc
10921 gcgggacccc cggttcgagt ctcggaccgg ccggactgcg gcgaacgggg gtttgcctcc
10981 ccgtcatgca agaccccgct tgcaaattcc tccggaaaca gggacgagcc ccttttttgc
11041 ttttcccaga tgcatccggt gctgcggcag atgcgcccc ctcctcagca gcggcaagag
11101 caagagcagc ggcagacatg cagggcaccc tecectecte ctaecgegte aggaggggeg
11161 acateegegg ttgaegegge ageagatggt gattaegaac eccegeggeg eegggeeegg
11221 cactacctgg acttggagga gggcgagggc ctggcgcggc taggagcgcc ctctcctgag
11281 cggtacccaa gggtgcagct gaagcgtgat acgcgtgagg cgtacqtqcc qcqqcaqaac
11341 ctgtttcgcg accgcgaggg agaggagccc gaggagatgc gggatcgaaa gttccacgca
11401 gggcgcgagc tgcggcatgg cctgaatcgc gagcggttgc tgcgcgagga ggactttgag
11461 cccgacgcgc gaaccgggat tagtcccgcg cgcgcacacg tggcggccgc cgacctggta
11521 accgcatacg agcagacggt gaaccaggag attaactttc aaaaaagctt taacaaccac
11581 gtgcgtacgc ttgtggcgcg cgaggaggtg gctataggac tgatgcatct gtgggacttt
11641 gtaagcgcgc tggagcaaaa cccaaatagc aagccgctca tggcgcagct gttccttata
11701 gtgcagcaca gcagggacaa cgaggcattc agggatgcgc tgctaaacat agtagagccc
11761 gagggccgct ggctgctcga tttgataaac atcctgcaga gcatagtggt gcaggagcgc
11821 agettgagee tggetgacaa ggtggeegee ateaactatt eeatgettag eetgggeaag
11881 ttttacgccc gcaagatata ccatacccct tacgttccca tagacaagga ggtaaagatc
11941 gaggggttct acatgcgcat ggcgctgaag gtgcttacct tgagcgacga cctgggcgtt
12001 tategeaacg agegeateea caaggeegtg agegtgagee ggeggegega geteagegae
12061 cgcgagctga tgcacagcct gcaaagggcc ctggctggca cgggcagcgg cgatagagag
12121 gccgagtcct actttgacgc gggcgctgac ctgcgctggg ccccaagccg acgcgcctg
12181 gaggcagctg gggccggacc tgggctggcg gtggcacccg cgcgcgctgg caacgtcggc
12241 ggcgtggagg aatatgacga ggacgatgag tacgagccag aggacggcga gtactaagcg
12301 gtgatgtttc tgatcagatg atgcaagacg caacggaccc ggcggtgcgg gcggcgctgc
12361 agagecagee gteeggeett aactecaegg acgaetggeg eeaggteatg gaeegeatea
12421 tgtcgctgac tgcgcgcaat cctgacgcgt tccggcagca gccgcaggcc aaccggctct
12481 ccgcaattct ggaagcggtg gtcccggcgc gcgcaaaccc cacgcacgag aaggtgctgg
12541 cgatcgtaaa cgcgctggcc gaaaacaggg ccatccggcc cgacgaggcc ggcctggtct
12601 acgacgcgct gcttcagcgc gtggctcgtt acaacagcgg caacgtgcag accaacctqq
12661 accggctggt gggggatgtg cgcgaggccg tggcgcagcg tgagcgcgcg cagcagcagg
12721 gcaacctggg ctccatggtt gcactaaacg cetteetgag tacacagece gccaacgtge
12781 cgcggggaca ggaggactac accaactttg tgagcgcact gcggctaatg gtgactgaga
12841 caccgcaaag tgaggtgtac cagtctgggc cagactattt tttccagacc agtagacaag
12901 gcctgcagac cgtaaacctg agccaggett tcaaaaactt gcaggggctg tggggggtgc
12961 gggctcccac aggcgaccgc gcgaccgtgt ctagcttgct gacgcccaac tcgcgcctgt
13021 tgctgctgct aatagcgccc ttcacggaca gtggcagcgt gtcccgggac acatacctag
13081 gtcacttgct gacactgtac cgcgaggcca taggtcaggc gcatgtggac gagcatactt
13141 tccaggagat tacaagtgtc agccgcgcc tggggcagga ggacacgggc agcctggagg
```

```
13201 caaccctaaa ctacctgctg accaaccggc ggcagaagat cccctcgttg cacagtttaa
13261 acagcgagga ggagcgcatt ttgcgctacg tgcagcagag cgtgagcctt aacctgatgc
13321 gegaegggt aacgeecage gtggegetgg acatgaeege gegeaacatg gaacegggea
13381 tgtatgcctc aaaccggccg tttatcaacc gcctaatgga ctacttgcat cgcgcggccg
13441 cogtgaaccc cgagtatttc accaatgcca tottgaaccc gcactggcta ccgccccctg
13501 gtttctacac cgggggattc gaggtgcccg agggtaacga tggattcctc tgggacgaca
13561 tagacgacag cgtgttttcc ccgcaaccgc agaccctgct agagttgcaa cagcgcgagc
13621 aggcagaggc ggcgctgcga aaggaaagct tccgcaggcc aagcagcttg tccgatctag
13681 gcgctgcggc cccgcggtca gatgctagta gcccatttcc aagcttgata gggtctctta
13741 ccagcactcg caccacccgc ccgcgcctgc tgggcgagga ggagtaccta aacaactcgc
13801 tgctgcagcc gcagcgcgaa aaaaacctgc ctccqqcatt tcccaacaac qqqataqaqa
13861 gcctagtgga caagatgagt agatggaaga cgtacgcgca ggagcacagg gacgtgccag
13921 gcccgcgccc gcccacccgt cgtcaaaggc acgaccgtca gcggggtctg gtgtgggagg
13981 acgatgactc ggcagacgac agcagcgtcc tggatttggg agggagtggc aacccgtttg
14041 cgcaccttcg ccccaggctg gggagaatgt tttaaaaaaa aaaaagcatg atgcaaaata
14101 aaaaactcac caaggccatg gcaccgagcg ttggttttct tgtattcccc ttagtatgcg
14161 gegegeggeg atgtatgagg aaggteetee teeeteetae gagagtgtgg tgagegegge
14221 gccagtggcg gcggcgctgg gttctccctt cgatgctccc ctggacccgc cgtttgtgcc
14281 teegeggtac etgeggeeta eeggggggag aaacagcate egttaetetg agttggcace
14341 cetattegae accaecegtg tgtacetggt ggacaacaag teaacggatg tggcatecet
14401 gaactaccag aacgaccaca gcaactttct gaccacggtc attcaaaaca atgactacag
14461 cccgggggag gcaagcacac agaccatcaa tettgacgac eggtegcact ggggeggega
14521 cctgaaaacc atcctgcata ccaacatgcc aaatgtgaac gagttcatgt ttaccaataa
14581 gtttaaggeg egggtgatgg tgtegegett geetactaag gacaateagg tggagetgaa
14641 atacgagtgg gtggagttca cgctgcccga gggcaactac tccgagacca tgaccataga
14701 ccttatgaac aacgcgatcg tggagcacta cttgaaagtg ggcagacaga acggggttct
14761 ggaaagcgac atcggggtaa agtttgacac ccgcaacttc agactggggt ttgaccccgt
14821 cactggtctt gtcatgcctg gggtatatac aaacgaagcc ttccatccag acatcatttt
14881 getgeeagga tgeggggtgg actteaccea cageegeetg ageaacttgt tgggcateeg
14941 caageggcaa ccettccagg agggetttag gatcacetac gatgatetgg agggtggtaa
15001 cattcccgca ctgttggatg tggacgccta ccaggcgagc ttgaaagatg acaccgaaca
15061 gggcgggggt ggcgcaggcg gcagcaacag cagtggcagc ggcgcggaag agaactccaa
15121 cgcggcagcc gcggcaatgc agccggtgga ggacatgaac gatcatgcca ttcgcggcga
15181 cacctttgcc acacgggctg aggagaagcg cgctgaggcc gaagcagcgg ccgaagctgc
15241 egeceeget gegeaaceeg aggtegagaa geeteagaag aaaceggtga teaaaceeet
15301 gacagaggac agcaagaaac gcagttacaa cctaataagc aatgacagca ccttcaccca
15361 gtaccgcagc tggtaccttg catacaacta cggcgaccct cagaccggaa tccgctcatg
15421 gaccetgett tgeacteetg acgtaacetg eggeteggag eaggtetact ggtegttgee
15481 agacatgatg caagaccccg tgaccttccg ctccacgcgc cagatcagca actttccggt
15541 ggtgggcgcc gagctgttgc ccgtgcactc caagagcttc tacaacgacc aggccgtcta
15601 ctcccaactc atccgccagt ttacctctct gacccacgtg ttcaatcgct ttcccgagaa
15661 ccagattttg gcgcgcccgc cagccccac catcaccacc gtcagtgaaa acgttcctgc
15721 teteacagat caegggaege taecgetgeg caacagcate ggaggagtee agegagtgae
15781 cattactgac gccagacgcc gcacctgccc ctacgtttac aaggccctgg gcatagtctc
15841 gccgcgcgtc ctatcgagcc gcactttttg agcaagcatg tccatcctta tatcgcccag
15901 caataacaca ggctggggcc tgcgcttccc aagcaagatg tttggcgggg ccaagaagcg
15961 ctccgaccaa cacccagtgc gcgtgcgcgg gcactaccgc gcgccctggg gcgcgcacaa
16021 acgcggccgc actgggcgca ccaccgtcga tgacgccatc gacgcggtgg tggaggaggc
16081 gcgcaactac acgcccacgc cgccaccagt gtccacagtg gacgcggcca ttcagaccgt
16141 ggtgcgcgga gcccggcgct atgctaaaat gaagagacgg cggaggcgcg tagcacgtcg
16201 ccaccgccgc cgacceggca ctgccgccca acgcgcggcg gcggccctgc ttaaccgcgc
16261 acgtcgcacc ggccgacggg cggccatgcg ggccgctcga aggctggccg cgggtattgt
16321 cactgtgccc cccaggtcca ggcgacgagc ggccgccgca gcagccgcgg ccattagtgc
16381 tatgactcag ggtcgcaggg gcaacgtgta ttgggtgcgc gactcggtta gcggcctgcg
16441 cgtgcccgtg cgcacccgcc ccccgcgcaa ctagattgca agaaaaaact acttagactc
16501 gtactgttgt atgtatccag cggcggcggc gcgcaacgaa gctatgtcca agcgcaaaat
16561 caaagaagag atgctccagg tcatcgcgcc ggagatctat ggccccccga agaaggaaga
16621 gcaggattac aagccccgaa agctaaagcg ggtcaaaaag aaaaagaaag atgatgatga
16681 tgaacttgac gacgaggtgg aactgctgca cgctaccgcg cccaggcgac gggtacagtg
16741 gaaaggtega egegtaaaac gtgttttgeg acceggeace accgtagtet ttacgceegg
16801 tgagegetee accegeacet acaagegegt gtatgatgag gtgtaeggeg acgaggacet
16861 gcttgagcag gccaacgagc gcctcgggga gtttgcctac ggaaagcggc ataaggacat
16921 gctggcgttg ccgctggacg agggcaaccc aacacctagc ctaaagcccg taacactgca
16981 gcaggtgctg cccgcgcttg caccgtccga agaaaagcgc ggcctaaagc gcgagtctgg
17041 tgacttggca cccaccgtgc agctgatggt acccaagcgc cagcgactgg aagatgtctt
17101 ggaaaaaatg accgtggaac ctgggctgga gcccgaggtc cgcgtgcggc caatcaagca
17161 ggtggcgccg ggactgggcg tgcagaccgt ggacgttcag atacccacta ccagtagcac
17221 cagtattgcc accgccacag agggcatgga gacacaaacg tccccggttg cctcagcggt
17281 ggcggatgcc gcggtgcagg cggtcgctgc ggccgcgtcc aagacctcta cggaggtgca
17341 aacggacccg tggatgtttc gcgtttcagc cccccggcgc ccgcgcggtt cgaggaagta
17401 eggegeegee agegegetae tgeecgaata tgeectacat cettecattg egeetaeece
17461 eggetategt ggetacacet acegececag aagacgagea actaceegae geegaaceae
17521 cactggaace egeogeege gtegeogteg ceagecegtg etggeceega ttteegtgeg
17581 cagggtggct cgcgaaggag gcaggaccct ggtgctgcca acagcgcgct accaccccag
17641 categittaa aageeggiet tigiggitet tigeagatatig geeeteacet geegeeteeg
17701 tttcccggtg ccgggattcc gaggaagaat gcaccgtagg aggggcatgg ccggccacgg
```

```
17761 cctgacgggc ggcatgcgtc gtgcgcacca ccggcggcgg cgcgcgtcgc accgtcgcat
17821 gegeggeggt atcetgecce teettattee actgategee geggegattg gegeegtgee
17881 cggaattgca tccgtggcct tgcaggcgca gagacactga ttaaaaacaa gttgcatgtg
17941 gaaaaatcaa aataaaaagt ctggactctc acgctcgctt ggtcctgtaa ctattttgta
18001 gaatggaaga catcaacttt gegtetetgg ceeegegaca eggetegege eegtteatgg
18061 gaaactggca agatatcggc accagcaata tgagcggtgg cgccttcagc tggggctcgc
18121 tgtggagcgg cattaaaaat ttcggttcca ccgttaagaa ctatggcagc aaggcctgga
18181 acagcagcac aggccagatg ctgagggata agttgaaaga gcaaaatttc caacaaaagg
18241 tggtagatgg cctggcctct ggcattagcg gggtggtgga cctggccaac caggcagtgc
18301 aaaataagat taacagtaag cttgatcccc gccctcccgt agaggagcct ccaccggccg
18361 tggagacagt gtctccagag gggcgtggcg aaaagcgtcc gcgccccgac agggaagaaa
18421 ctctggtgac gcaaatagac gagcctccct cgtacgagga ggcactaaag caaggcctgc
18481 ccaccacccg tcccatcgcg cccatggcta ccggagtgct gggccagcac acacccgtaa
18541 cgctggacct gcctccccc gccgacaccc agcagaaacc tgtgctgcca ggcccgaccg
18601 ccgttgttgt aacccgtcct agccgcgcgt ccctgcgccg cgccgccagc ggtccgcgat
18661 cgttgcggcc cgtagccagt ggcaactggc aaagcacact gaacagcatc gtgggtctgg
18721 gggtgcaatc cctgaagege cgacgatget tetgaatage taaegtgteg tatgtgtgte
18781 atgtatgcgt ccatgtcgcc gccagaggag ctgctgagcc gccgcgcgcc cgctttccaa
18841 gatggctacc ccttcgatga tgccgcagtg gtcttacatg cacatctcgg gccaggacgc
18901 ctcggagtac ctgagcccg ggctggtgca gtttgcccgc gccaccgaga cgtacttcag
18961 cctgaataac aagtttagaa accccacggt ggcgcctacg cacgacgtga ccacagaccg
19021 gtcccagcgt ttgacgctgc ggttcatccc tgtggaccgt gaggatactg cgtactcgta
19081 caaggegegg ttcaccctag ctgtgggtga taaccgtgtg ctggacatgg cttccacgta
19141 ctttgacatc cgcggcgtgc tggacagggg ccctactttt aagccctact ctggcactgc
19201 ctacaacgcc ctggctccca agggtgcccc aaatccttgc gaatgggatg aagctgctac
19261 tgctcttgaa ataaacctag aagaagagga cgatgacaac qaaqacqaaq taqacqaqca
19321 agctgagcag caaaaaactc acgtatttgg gcaggcgcct tattctggta taaatattac
19381 aaaggagggt attcaaatag gtgtcgaagg tcaaacacct aaatatgccg ataaaacatt
19441 tcaacctgaa cctcaaatag gagaatctca gtggtacgaa actgaaatta atcatgcagc
19501 tgggagagtc cttaaaaaga ctaccccaat gaaaccatgt tacggttcat atgcaaaacc
19561 cacaaatgaa aatggagggc aaggcattct tgtaaagcaa caaaatggaa agctagaaag
19621 tcaagtggaa atgcaatttt tctcaactac tgaggcgacc gcaggcaatg gtgataactt'
19681 gactcctaaa gtggtattgt acagtgaaga tgtagatata gaaaccccag acactcatat
19741 ttcttacatg cccactatta aggaaggtaa ctcacgagaa ctaatgggcc aacaatctat
19801 gcccaacagg cctaattaca ttgcttttag ggacaatttt attggtctaa tgtattacaa
19861 cagcacgggt aatatgggtg ttctggcggg ccaagcatcg cagttgaatg ctgttgtaga
19921 tttgcaagac agaaacacag agctttcata ccagcttttg cttgattcca ttggtgatag
19981 aaccaggtac ttttctatgt ggaatcaggc tgttgacagc tatgatccag atgttagaat
20041 tattgaaaat catggaactg aagatgaact tccaaattac tgctttccac tgggaggtgt
20101 gattaataca gagactctta ccaaggtaaa acctaaaaca ggtcaggaaa atggatggga
20161 aaaagatgct acagaatttt cagataaaaa tgaaataaga gttggaaata attttgccat
20221 ggaaatcaat ctaaatgcca acctgtggag aaatttcctg tactccaaca tagcqctqta
20281 tttgcccgac aagctaaagt acagtccttc caacgtaaaa atttctgata acccaaacac
20341 ctacgactac atgaacaage gagtggtggc teeegggtta gtggactget acattaacet
20401 tggagcacgc tggtcccttg actatatgga caacgtcaac ccatttaacc accaccqcaa
20461 tgctggcctg cgctaccgct caatgttgct gggcaatggt cgctatgtgc ccttccacat
20521 ccaggtgcct cagaagttct ttgccattaa aaacctcctt ctcctgccgg gctcatacac
20581 ctacgagtgg aacttcagga aggatgttaa catggttctg cagagctccc taggaaatga
20641 cctaagggtt gacggagcca gcattaagtt tgatagcatt tgcctttacg ccaccttctt
20701 ccccatggcc cacaacaccg cctccacgct tgaggccatg cttagaaacg acaccaacga
20761 ccagtccttt aacgactate teteegeege caacatgete taccetatae eegecaaege
20821 taccaacgtg cccatatcca teceeteeeg caactgggeg gettteegeg getgggeett
20881 cacgcgcctt aagactaagg aaaccccatc actgggctcg ggctacgacc cttattacac
20941 ctactetgge tetataceet acetagatgg aacettttae etcaaceaca cetttaagaa
21061 caacgagttt gaaattaagc gctcagttga cggggagggt tacaacgttg cccagtgtaa
21121 catgaccaaa gactggttcc tggtacaaat gctagctaac tacaacattg gctaccaggg
21181 cttctatatc ccagagagct acaaggaccg catgtactcc ttctttagaa acttccagcc
21241 catgagccgt caggtggtgg atgatactaa atacaaggac taccaacagg tgggcatcct
21301 acaccaacac aacaactetg gatttgttgg ctacettgee eccaecatge gegaaggaca
21361 ggcctaccct gctaacttcc cctatccgct tataggcaag accgcagttg acagcattac
21421 ccagaaaaag tttctttgcg atcgcaccct ttggcgcatc ccattctcca gtaactttat
21481 gtccatgggc gcactcacag acctgggcca aaacettete tacgccaact ccgcccacge
21541 gctagacatg acttttgagg tggatcccat ggacgagccc accettettt atgttttgtt
21601 tgaagtcttt gacgtggtcc gtgtgcaccg gccgcaccgc ggcgtcatcg aaaccgtgta
21661 cctgcgcacg cccttctcgg ccggcaacgc cacaacataa agaagcaagc aacatcaaca
21721 acagetgeeg ceatgggete cagtgageag gaactgaaag ceattgteaa agatettggt
21781 tgtgggccat attttttggg cacctatgac aagcgctttc caggetttgt ttctccacac
21841 aagctcgcct gcgccatagt caatacggcc ggtcgcgaga ctgggggcgt acactggatg
21901 gcctttgcct ggaacccgca ctcaaaaaca tgctacctct ttgagccctt tggcttttct
21961 gaccagcgac tcaagcaggt ttaccagttt gagtacgagt cactcctgcg ccgtagcgcc
22021 attgettett ecceegaceg etgtataaeg etggaaaagt ecaeecaaag egtacagggg
22081 occaactegg cegectgtgg actattetge tgeatgttte tecaegeett tgecaactgg
22141 ccccaaactc ccatggatca caaccccacc atgaacctta ttaccggggt acccaactcc
22201 atgeteaaca gteeceaggt acageceace etgegtegea accaggaaca getetacage
22261 ttcctggagc gccactcgcc ctacttccgc agccacagtg cgcagattag gagcgccact
```

```
22321 tettettgte acttgaaaaa catgtaaaaa taatgtaeta gagacaettt caataaaqqe
22381 aaatgetttt atttgtacac tetegggtga ttatttacce ecaceettge egtetgegee
22441 gtttaaaaat caaaggggtt ctgccgcgca tcgctatgcg ccactggcag ggacacgttg
22501 cgatactggt gtttagtgct ccacttaaac tcaggcacaa ccatccqcqq caqctcqqtq
22561 aagttttcac tccacaggct gcgcaccatc accaacgcgt ttagcaggtc gggcgccgat
22621 atcttgaagt cgcagttggg gcctccgccc tgcgcgcgc agttgcgata cacagggttg
22681 cagcactgga acactatcag cgccgggtgg tgcacgctgg ccagcacgct cttgtcggag
22741 atcagatccg cgtccaggtc ctccgcgttg ctcagggcga acggagtcaa ctttggtagc
22801 tgccttccca aaaagggcgc gtgcccaggc tttgagttgc actcgcaccg tagtggcatc
22861 aaaaggtgac cgtgcccggt ctgggcgtta ggatacagcg cctgcataaa agccttgatc
22921 tgcttaaaag ccacctgagc ctttgcgcct tcagagaaga acatgccgca agacttgccg
22981 gaaaactgat tggccggaca ggccgcgtcg tgcacgcagc accttgcgtc ggtgttggag
23041 atotgoacca cattleggee ecaceggtte tteacgatet tggeettget agactgetee
23101 ttcagcgcgc gctgcccgtt ttcgctcgtc acatccattt caatcacgtg ctccttattt
23161 atcataatgc ttccgtgtag acacttaagc tcgccttcga tctcagcgca gcggtgcagc
23221 cacaacgcgc agcccgtggg ctcgtgatgc ttgtaggtca cctctgcaaa cgactgcagg
23281 tacgcctgca ggaatcgccc catcatcgtc acaaaggtct tgttgctggt gaaggtcagc
23341 tgcaacccgc ggtgctcctc gttcagccag gtcttgcata cggccgccag agcttccact
23401 tggtcaggca gtagtttgaa gttcgccttt agatcgttat ccacgtggta cttgtccatc
23461 agegegege cagectecat geeettetee caegeagaca egateggeae aeteageggg
23521 ttcatcaccg taatttcact ttccgcttcg ctgggctctt cctcttcctc ttgcgtccgc
23581 ataccacgcg ccactgggtc gtcttcattc agccgccgca ctgtgcgctt acctcctttg
23641 ccatgcttga ttagcaccgg tgggttgctg aaacccacca tttgtagcgc cacatcttct
23701 ctttcttcct cgctgtccac gattacctct ggtgatggcg ggcgctcggg cttgggagaa
23761 gggcgcttct ttttcttctt gggcgcaatg gccaaatccg ccgccgaggt cgatggccgc
23821 gggctgggtg tgcgcggcac cagcgcgtct tgtgatgagt cttcctcgtc ctcgqactcq
23881 atacgccgcc tcatccgctt ttttgggggc gcccggggag gcggcggcga cggggacggg
23941 gacgacacgt cctccatggt tgggggacgt cgcgccgcac cgcgtccgcg ctcgggggtg
24001 gtttcgcgct gctcctcttc ccgactggcc atttccttct cctataggca gaaaaagatc
24061 atggagtcag tcgagaagaa ggacagccta accgccccct ctgagttcgc caccaccgcc
24121 tccaccgatg ccgccaacgc gcctaccacc ttccccgtcg aggcaccccc gcttgaggag
24181 gaggaagtga ttatcgagca ggacccaggt tttgtaagcg aagacgacga ggaccgctca
24241 gtaccaacag aggataaaaa gcaagaccag gacaacgcag aggcaaacga ggaacaagtc
24301 gggcggggg acgaaaggca tggcgactac ctagatgtgg gagacgacgt gctgttgaag
24361 catctgcage gccagtgcgc cattatctgc gacgcgttgc aagagcgcag cgatgtgccc
24421 ctcgccatag cggatgtcag ccttgcctac gaacgccacc tattctcacc gcgcgtaccc
24481 cccaaacgcc aagaaaacgg cacatgcgag cccaacccgc gcctcaactt ctaccccgta
24541 tttgccgtgc cagaggtgct tgccacctat cacatctttt tccaaaactq caaqataccc
24601 ctatectgee gtgecaaceg cageegageg gacaageage tggeettgeg geagggeget
24661 gtcatacctg atatcgcctc gctcaacgaa gtgccaaaaa tctttgaggg tcttggacgc
24721 gacgagaagc gcgcggcaaa cgctctgcaa caggaaaaca gcgaaaatga aagtcactct
24781 ggagtgttgg tggaactcga gggtgacaac gcgcgcctag ccgtactaaa acgcagcatc
24841 gaggtcaccc actttgccta cccggcactt aacctacccc ccaaggtcat gagcacagtc
24901 atgagtgagc tgatcgtgcg ccgtgcgcag cccctggaga gggatgcaaa tttgcaagaa
24961 caaacagagg agggcctacc cgcagttggc gacgagcagc tagcgcgctg gcttcaaacq
25021 cgcgagcctg ccgacttgga ggagcgacgc aaactaatga tggccgcagt gctcgttacc
25081 gtggagcttg agtgcatgca gcggttcttt gctgacccgg agatgcagcg caagctagag
25141 gaaacattgc actacacctt tcgacagggc tacgtacgcc aggcctgcaa gatctccaac
25201 gtggagctct gcaacctggt ctcctacctt ggaattttgc acgaaaaccg ccttgggcaa
25261 aacgtgette attecaeget caagggegag gegegegeg actaegteeg egaetgegtt
25321 tacttatttc tatgctacac ctggcagacg gccatgggcg tttggcagca gtgcttggag
25381 gagtgcaacc tcaaggagct gcagaaactg ctaaagcaaa acttgaagga cctatggacg
25441 gccttcaacg agcgctccgt ggccgcgcac ctggcggaca tcattttccc cgaacgcctg
25501 cttaaaaccc tgcaacaggg tctgccagac ttcaccagtc aaagcatgtt gcagaacttt
25561 aggaacttta tectagageg etcaggaate ttgecegeea cetgetgtge acttectage
25621 gaetttgtge ccattaagta eegegaatge eeteegeege tttggggeea etgetaeett
25681 ctgcagctag ccaactacct tgcctaccac tctgacataa tggaagacgt gagcggtgac
25741 ggtctactgg agtgtcactg tcgctgcaac ctatgcaccc cgcaccgctc cctggtttgc
25801 aattcgcagc tgcttaacga aagtcaaatt atcggtacct ttgagctgca gggtccctcg
25861 cctgacgaaa agtccgcggc tccggggttg aaactcactc cggggctgtg gacqtcqqct
25921 taccttcgca aatttgtacc tgaggactac cacgcccacg agattaggtt ctacgaagac
25981 caatcccgcc cgccaaatgc ggagettacc gcctgcgtca ttacccaggg ccacattctt
26041 ggccaattgc aagccatcaa caaagcccgc caagagtttc tgctacqaaa qqqacqqqqq
26101 gtttacttgg acccccagtc cggcgaggag ctcaacccaa tccccccgcc gccgcagccc
26161 tatcagcagc agccgcgggc ccttgcttcc caggatggca cccaaaaaga agctgcagct
26221 gccgccgcca cccacggacg aggaggaata ctgggacagt caggcagagg aggttttgga
26281 cgaggaggag gaggacatga tggaagactg ggagagccta gacgaggaag cttccgaqqt
26341 cgaagaggtg tcagacgaaa caccgtcacc ctcggtcgca ttcccctcgc cggcgcccca
26401 gaaateggea aceggtteea geatggetae aaceteeget ceteaggege egeeggeact
26461 gcccgttcgc cgacccaacc gtagatggga caccactgga accagggccg gtaagtccaa
26521 gcagccgccg ccgttagccc aagagcaaca acagcgccaa ggctaccgct catggcgcgg
26581 gcacaagaac gccatagttg cttgcttgca agactgtggg ggcaacatct ccttcgcccg
26641 cegetttett etetaceate aeggegtgge etteeeegt aacateetge attactaceg
26701 teatetetae ageceataet geaceggegg eageggeage ggeageaaea geageggeea
26761 cacagaagca aaggcgaccg gatagcaaga ctctgacaaa gcccaagaaa tccacagcgg
26821 eggeageage aggaggagga gegetgegte tggegeceaa egaaceegta tegaceegeg
```

```
26881 agcttagaaa caggattttt cccactctgt atgctatatt tcaacagagc aggggccaag
26941 aacaagaget gaaaataaaa aacaggtete tgegateeet caccegeage tgeetgtate
27001 acaaaagcga agatcagctt cggcgcacgc tggaagacgc ggaggctctc ttcagtaaat
27061 actgcgcgct gactcttaag gactagtttc gcgccctttc tcaaatttaa gcgcqaaaac
27121 tacgtcatct ccagcggcca cacccggcgc cagcacctgt cgtcagcgcc attatgagca
27181 aggaaattcc cacgccctac atgtggagtt accagccaca aatgggactt gcggctggag
27241 ctgcccaaga ctactcaacc cgaataaact acatgagege gggaccccac atgatatccc
27301 gggtcaacgg aatccgcgcc caccgaaacc gaattctctt ggaacaggcg gctattacca
27361 ccacacctcg taataacctt aatccccgta gttggcccgc tgccctggtg taccaggaaa
27421 gtcccgctcc caccactgtg gtacttccca gagacgccca ggccgaagtt cagatgacta
27481 actcaggggc gcagcttgcg ggcggctttc gtcacagggt gcggtcgccc gggcagggta
27541 taactcacct gacaatcaga gggcgaggta ttcagctcaa cgacgagtcg gtgagctcct
27601 cgcttggtct ccgtccggac gggacatttc agatcggcgg cgccggccgt ccttcattca
27661 egectegtea ggcaateeta actetgeaga cetegteete tgageegege tetggaggea
27721 ttggaactct gcaatttatt gaggagtttg tgccatcggt ctactttaac cccttctcgg
27781 gacctcccgg ccactatccg gatcaattta ttcctaactt tgacgcggta aaggactcgg
27841 cggacggcta cgactgaatg ttaagtggag aggcagagca actgcgcctg aaacacctgg
27901 tocactgtcg ccgccacaag tgctttgccc gcgactccgg tgagttttgc tactttgaat
27961 tgcccgagga tcatatcgag ggcccggcgc acggcgtccg gcttaccgcc cagggagagc
28021 ttgcccgtag cctgattcgg gagtttaccc agcgccccct gctagttgag cgggacaggg
28081 gaccctgtgt tctcactgtg atttgcaact gtcctaacct tggattacat caagatcttt
28141 gttgccatct ctgtgctgag tataataaat acagaaatta aaatatactg gggctcctat
28201 cgccatcctg taaacgccac cgtcttcacc cgcccaagca aaccaaggcg aaccttacct
28261 ggtactttta acatctctcc ctctgtgatt tacaacagtt tcaacccaga cggagtgagt
28321 ctacgagaga acctetecga geteagetae tecateagaa aaaacaceae ceteettace
28381 tgccgggaac gtacgagtgc gtcaccggcc gctgcaccac acctaccgcc tgaccgtaaa
28441 ccagactttt tccggacaga cctcaataac tctgtttacc agaacaggag gtgagcttag
28501 aaaaccctta gggtattagg ccaaaggcgc agctactgtg gggtttatga acaattcaag
28561 caactctacg ggctattcta attcaggttt ctctagaatc ggggttgggg ttattctctg
28621 tettgtgatt etettatte ttatactaac gettetetge etaaggeteg eegeetgetg
28681 tgtgcacatt tgcatttatt gtcagctttt taaacgctgg ggtcgccacc caagatgatt
28741 aggtacataa tcctaggttt actcaccctt gcgtcagccc acggtaccac ccaaaaggtg
28801 gattttaagg agccagcctg taatgttaca ttcgcagctg aagctaatga gtgcaccact
28861 cttataaaat gcaccacaga acatgaaaag ctgcttattc gccacaaaaa caaaattggc
28921 aagtatgctg tttatgctat ttggcagcca ggtgacacta cagagtataa tgttacagtt
28981 ttccagggta aaagtcataa aacttttatg tatacttttc cattttatga aatgtgcgac
29041 attaccatgt acatgagcaa acagtataag ttgtggcccc cacaaaattg tgtggaaaac
29101 actggcactt tctgctgcac tgctatgcta attacagtgc tcgctttggt ctgtacccta
29161 ctctatatta aatacaaaag cagacgcagc tttattgagg aaaagaaaat gccttaattt
29221 actaagttac aaagctaatg tcaccactaa ctgctttact cgctgcttgc aaaacaaatt
29281 caaaaagtta gcattataat tagaatagga tttaaacccc ccggtcattt cctgctcaat
29341 accattcccc tgaacaattg actctatgtg ggatatgctc cagcgctaca accttgaagt
29401 caggetteet ggatgteage atetgaettt ggeeageace tgteeegegg atttgtteea
29461 gtccaactac agegacccac cctaacagag atgaccaaca caaccaacge ggccgccgct
29521 accggactta catctaccac aaatacaccc caagtttctg cctttgtcaa taactgggat
29581 aacttgggca tgtggtggtt ctccatagcg cttatgtttg tatgccttat tattatgtgg
29641 ctcatctgct gcctaaagcg caaacgcgcc cgaccaccca tctatagtcc catcattgtg
29701 ctacacccaa acaatgatgg aatccataga ttggacggac tgaaacacat gttcttttct
29761 cttacagtat gattaaatga gacatgattc ctcgagtttt tatattactg acccttgttg
29821 cgcttttttg tgcgtgctcc acattggctg cggtttctca catcgaagta gactgcattc
29881 cagcetteac agretatitg etttaeggat tigteacect caegeteate igeageetea
29941 tcactgtggt catcgccttt atccagtgca ttgactgggt ctgtgtgcgc tttgcatatc
30001 tcagacacca tccccagtac agggacagga ctatagctga gcttcttaga attctttaat
30061 tatgaaattt actgtgactt ttctgctgat tatttgcacc ctatctgcgt tttgttcccc
30121 gacctccaag cctcaaagac atatatcatg cagattcact cgtatatgga atattccaag
30181 ttgctacaat gaaaaaagcg atctttccga agcctggtta tatgcaatca tctctgttat
30241 ggtgttctgc agtaccatct tagccctagc tatatatccc taccttgaca ttggctggaa
30301 acgaatagat gccatgaacc acccaacttt ccccgcgccc gctatgcttc cactgcaaca
30361 agttgttgcc ggcggctttg tcccagccaa tcagcctcgc cccacttctc ccacccccac
30421 tgaaatcagc tactttaatc taacaggagg agatgactga caccctagat ctagaaatgg
30481 acggaattat tacagagcag cgcctgctag aaagacgcag ggcagcggcc gagcaacagc
30541 gcatgaatca agagctccaa gacatggtta acttgcacca gtgcaaaagg ggtatctttt
30601 gtctggtaaa gcaggccaaa gtcacctacg acagtaatac caccggacac cgccttagct
30661 acaagttgcc aaccaagcgt cagaaattgg tggtcatggt gggagaaaag cccattacca
30721 taactcagca ctcggtagaa accgaaggct gcattcactc accttgtcaa ggacctgagg
30781 atetetgeae cettattaag accetgtgeg gteteaaaga tettatteee tttaactaat
30841 aaaaaaaaat aataaagcat cacttactta aaatcagtta gcaaatttct gtccagttta
30901 ttcagcagca cctccttgcc ctcctcccag ctctggtatt gcagcttcct cctggctgca
30961 aactttetee acaatetaaa tggaatgtea gttteeteet gtteetgtee ateegeacee
31021 actatettea tgttgttgca gatgaagege geaagaeegt etgaagatae etteaaeeee
31081 gtgtatecat atgacaegga aaeeggteet ecaaetgtge ettttettae teeteeettt
31141 gtatccccca atgggtttca agagagtccc cctggggtac tctctttgcg cctatccgaa
31201 cctctagtta cctccaatgg catgcttgcg ctcaaaatgg gcaacggcct ctctctggac
31261 gaggccggca accttacctc ccaaaatgta accactgtga gcccacctct caaaaaaaacc
31321 aagtcaaaca taaacctgga aatatctgca cccctcacag ttacctcaga agccctaact
31381 gtggctgccg ccgcacctct aatggtcgcg ggcaacacac tcaccatgca atcacaggcc
```

```
31441 ccgctaaccg tgcacgactc caaacttagc attgccaccc aaggacccct cacaqtqtca
31501 gaaggaaagc tagccctgca aacatcaggc cccctcacca ccaccgatag cagtaccctt
31561 actatcactg cctcaccccc tctaactact gccactggta gcttgggcat tgacttgaaa
31621 gagcccattt atacacaaaa tggaaaacta ggactaaagt acggggctcc tttgcatgta
31681 acagacgacc taaacacttt gaccgtagca actggtccag gtgtgactat taataatact
31741 tccttgcaaa ctaaagttac tggagccttg ggttttgatt cacaaggcaa tatgcaactt
31801 aatgtagcag gaggactaag gattgattet caaaacagac geettataet tgatgttagt
31861 tatccgtttg atgctcaaaa ccaactaaat ctaagactag gacagggccc tctttttata
31921 aactcagccc acaacttgga tattaactac aacaaaggcc tttacttgtt tacagcttca
31981 aacaatteca aaaagettga ggttaaceta ageaetgeea aggggttgat gtttgaeget
32041 acagccatag ccattaatgc aggagatggg cttgaatttg gttcacctaa tgcaccaaac
32101 acaaatcccc tcaaaacaaa aattggccat ggcctagaat ttgattcaaa caaggctatg
32161 gttcctaaac taggaactgg ccttagtttt gacagcacag gtgccattac agtaggaaac
32221 aaaaataatg ataagctaac tttgtggacc acaccagctc catctcctaa ctgtagacta
32281 aatgcagaga aagatgctaa actcactttg gtcttaacaa aatgtggcag tcaaatactt
32341 gctacagttt cagttttggc tgttaaaggc agtttggctc caatatctgg aacagttcaa
32401 agtgctcatc ttattataag atttgacgaa aatggagtgc tactaaacaa ttccttcctg
32461 gacccagaat attggaactt tagaaatgga gatcttactg aaggcacagc ctatacaaac
32521 gctgttggat ttatgcctaa cctatcagct tatccaaaat ctcacggtaa aactgccaaa
32581 agtaacattg tcagtcaagt ttacttaaac ggagacaaaa ctaaacctgt aacactaacc
32641 attacactaa acggtacaca ggaaacagga gacacaactc caagtgcata ctctatgtca
32701 ttttcatggg actggtctgg ccacaactac attaatgaaa tatttgccac atcctcttac
32761 actttttcat acattgccca agaataaaga atcgtttgtg ttatgtttca acgtgtttat
32821 ttttcaattg cagaaaattt caagtcattt ttcattcagt agtatagccc caccaccaca
32881 tagettatae agateaeegt acettaatea aacteaeaga accetagtat teaacetgee
32941 acctccctcc caacacacag agtacacagt cctttctccc cggctggcct taaaaagcat
33001 catatcatgg gtaacagaca tattcttagg tgttatattc cacacggttt cctgtcgagc
33061 caaacgctca tcagtgatat taataaactc cccgggcagc tcacttaagt tcatgtcgct
33121 gtccagctgc tgagccacag gctgctgtcc aacttgcggt tgcttaacgg gcggcgaagg
33181 agaagtccac gcctacatgg gggtagagtc ataatcgtgc atcaggatag ggcggtggtg
33241 ctgcagcagc gcgcgaataa actgctgccg ccgccgctcc gtcctgcagg aatacaacat
33301 ggcagtggtc tcctcagcga tgattcgcac cgcccgcagc ataaggcgcc ttgtcctccg
33361 ggcacagcag cgcaccctga tctcacttaa atcagcacag taactgcagc acagcaccac
33421 aatattgttc aaaatcccac agtgcaaggc gctgtatcca aagctcatgg cggggaccac
33481 agaacccacg tggccatcat accacaagcg caggtagatt aagtggcgac ccctcataaa
33541 cacgctggac ataaacatta cctcttttgg catgttgtaa ttcaccacct cccggtacca
33601 tataaacctc tgattaaaca tggcgccatc caccaccatc ctaaaccagc tggccaaaac
33661 ctgcccgccg gctatacact gcagggaacc gggactggaa caatgacagt ggagagccca
33721 ggactogtaa ccatggatca tcatgctogt catgatatca atgttggcac aacacaggca
33781 cacgtgcata cactteetca ggattacaag eteeteegg gttagaacca tateecaggg
33841 aacaacccat teetgaatea gegtaaatee cacactgeag ggaagacete geaegtaact
33901 cacgttgtgc attgtcaaag tgttacattc gggcagcagc ggatgatcct ccagtatggt
33961 agcgcgggtt tctgtctcaa aaggaggtag acgatcccta ctgtacggag tgcgccgaga
34021 caaccgagat cgtgttggtc gtagtgtcat gccaaatgga acgccggacg tagtcatatt
34081 teetgaagea aaaccaggtg egggegtgae aaacagatet gegteteegg tetegeeget
34141 tagategete tgtgtagtag ttgtagtata tecactetet caaagcatee aggegeeece
34201 tggcttcggg ttctatgtaa actccttcat gcgccgctgc cctgataaca tccaccaccg
34261 cagaataagc cacacccagc caacctacac attcgttctg cgagtcacac acgggaggag
34321 cgggaagagc tggaagaacc atgtttttt ttttattcca aaagattatc caaaacctca
34381 aaatgaagat ctattaagtg aacgcgctcc cctccggtgg cgtggtcaaa ctctacagcc
34441 aaagaacaga taatggcatt tgtaagatgt tgcacaatgg cttccaaaag gcaaacggcc
34501 ctcacgtcca agtggacgta aaggctaaac ccttcagggt gaatctcctc tataaacatt
34561 ccagcacctt caaccatgcc caaataattc tcatctcgcc accttctcaa tatatctcta
34621 agcaaatccc gaatattaag tccggccatt gtaaaaatct gctccagagc gccctccacc
34681 ttcagcctca agcagcgaat catgattgca aaaattcagg ttcctcacag acctgtataa
34741 gattcaaaag cggaacatta acaaaaatac cgcgatcccg taggtccctt cgcagggcca
34801 gctgaacata atcgtgcagg tctgcacgga ccagcgcggc cacttccccg ccaggaacca
34861 tgacaaaaga acccacactg attatgacac gcatactcgg agctatgcta accagcgtag
34921 ccccgatgta agcttgttgc atgggcggcg atataaaatg caaggtgctg ctcaaaaaat
34981 caggcaaagc ctcgcgcaaa aaagaaagca catcgtagtc atgctcatgc agataaaggc
35041 aggtaagctc cggaaccacc acagaaaaag acaccatttt tctctcaaac atgtctgcgg
35101 gtttctgcat aaacacaaaa taaaataaca aaaaaacatt taaacattag aagcctgtct
35161 tacaacagga aaaacaaccc ttataagcat aagacggact acggccatgc cggcgtgacc
35221 gtaaaaaaac tggtcaccgt gattaaaaag caccaccgac agctcctcgg tcatgtccgg
35281 agtcataatg taagactcgg taaacacatc aggttgattc acatcggtca gtgctaaaaa
35341 gcgaccgaaa tagcccgggg gaatacatac ccgcaggcgt agagacaaca ttacagcccc
35401 cataggaggt ataacaaaat taataggaga gaaaaacaca taaacacctg aaaaaccctc
35461 ctgcctaggc aaaatagcac cctcccgctc cagaacaaca tacagcgctt ccacagcggc
35521 agccataaca gtcagcctta ccagtaaaaa agaaaaccta ttaaaaaaac accactcgac
35581 acggcaccag ctcaatcagt cacagtgtaa aaaagggcca agtgcagagc gagtatatat
35641 aggactaaaa aatgacgtaa cggttaaagt ccacaaaaaa cacccagaaa accgcacgcq
35701 aacctacgcc cagaaacgaa agccaaaaaa cccacaactt cctcaaatcg tcacttccgt
35761 tttcccacgt tacgtaactt cccattttaa gaaaactaca attcccaaca catacaagtt
35821 actocgood aaaacctacg toaccogood cgttoccacg coccegogoda cqtcacaaac
35881 tccacccct cattatcata ttggcttcaa tccaaaataa ggtatattat tgatgatg
```

Write to the Help Desk

NCBI | NLM | NIH

Department of Health & Human Services

Privacy Statement | Freedom of Information Act | Disclaimer